Deliverable D13

Catalogue of Best-Practice Implementation Examples

Contract-No. TREN/06/FP6TR/S07.66711/038682-KITE
Work Package Team

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<td>Revision after second internal review process by project partner Karlsruhe Institute of Technology (KIT)</td>
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0 Executive Summary

The “Catalogue of Best-Practice Implementation Examples” – Deliverable 13 is embedded in work package 5 “Intermodal Interchange Points and Related Services”. The Deliverable has two key aspects: One focus lies on the definition of services, facilities and characteristics at interchanges that support seamless intermodal long distance travel for passengers including the “last/first mile”. Second aim is the development of a “Catalogue of examples of best-practice” including a description of interchanges (railway stations, airports and ports) all over Europe that are outstanding in various kinds of passenger related services. This Catalogue is also integrated in the wiki-database.

The definition of issues which are crucial to ensure a high quality seamless intermodality was carried out on the basis of results from WP1 and previous research projects, dialogue with European experts and further on the basis of the first step of a multi-stage survey. This survey was conducted with operators and key persons responsible for passenger related services. Within the first survey step the interviewees had to assess different aspects according to their importance from the passenger’s point of view. In total more than 20 services that support seamless intermodal travelling were identified. Furthermore, within the survey information for the compilation of the Catalogue were collected; amongst others concerning the historical background, the structural arrangement of the interchange, intermodality and special conveniences for passengers provided for long distance travel.

The work of Deliverable 13 forms the basis for further in-depth analysis of selected terminals and services (D14). Main aim of the in-depth analysis is to gain knowledge on organisational matters as well as institutional and implementation related issues supporting the successful development and implementation of passenger services to finally derive guidelines of good intermodality practice.
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1 Introduction

1.1 Placement of Catalogue of Best-Practice Implementation Examples within WP5

The overall goal of work package 5 “Intermodal Interchange Points and Related Services” is to define the main important characteristics of a good-practice inter-modal interchange terminal and the relevant services for passenger travel. Furthermore, guidelines of good inter-modality practice with the focus on a successful implementation process will be formulated. This includes all types of inter-urban and long-distance modes at interchanges like coach, rail, airplane and ship as well as the last mile access modes (e.g. car sharing, bicycle rent, taxi services) to ensure a seamless door-to-door travel.

This “Catalogue of Best-Practice Implementation Examples” (D13) is the first part of work package 5 and will give an overview of the state of the art in the field of intermodal passenger transport and it will present examples of good practice (GPE) of interchange terminals in Europe.

The compilation of the Catalogue of Best-Practice Implementation Examples is based on two components:

- On the one hand input will be derived from other completed research projects which dealt with this topic as well as from WP3 of the KITE Project, which identified already important passenger related services, features and characteristics. These services are estimated to be relevant for convenient long-distance intermodality respectively passengers’ needs that have to be satisfied by these services.

- On the other hand knowledge and experience of European experts will be collected in order to select good practice examples of intermodal interchange points in Europe.

From the GPE of the catalogue some good practice passenger related services of the terminals will be selected for the Deliverable D14. There, the services will be analysed in detail within an in-depth survey with the analytic focus on their successful development, implementation and operation. This in-depth survey will be conducted via telephone along with e-mail questioning in identified ‘key persons’ like the general operator as well as main operators. The analysis of the interviews aims to identify the optimal and successful implementation processes and the optimal design and characteristics. Recommendations and guidelines for framing and implementational
characteristics of passenger travel interchanges that support long distance inter-modal travelling for the best will be derived within D14 "Guidelines for seamless inter-modal interchanges". The whole structure of WP5 and the placement of the Catalogue of Best-Practice Implementation Examples (D13) in this work package can be seen in Figure 1-1.

1.2 Objectives of the Catalogue of Best-Practice Implementation Examples

This Catalogue of Best-Practice Implementation Examples aspires to give an overview on the state of the art in the field of intermodal interchanges and to figure out the most important services which support intermodal passenger transport. Furthermore, it aims to identify interchange terminals in Europe, which are exemplary in supporting seamless intermodal passenger transport. The catalogue includes a description of these good practice interchange points with information concerning the structural arrangement of the interchange terminal, technical features, intermodality and...
conveniences for passengers amongst others. Special services of good practice will be identified in terms of their main characteristics that optimise seamless intermodal passenger transport into more detail.

1.3 Structure of the deliverable

The general introduction in Chapter 1 describes the placement of the Catalogue of Best-Practice Implementation Examples within the work package 5 (WP5) and its main objectives.

Chapter 2 summarizes the results of previous/parallel KITE work package WP3. The following Chapter 3 gives an overview about previous research projects concerning intermodality and passenger transport. From the literature review needs of passengers respectively services that support seamless intermodal travelling will be derived (Chapters 4).

In chapter 5 the methodology for the selection of good practice examples of European interchange terminals will be presented. There, the selection procedure and the results of a first survey with operators of the selected terminals will be presented. The integration within the online knowledge base is described as well. Furthermore, the chapter contains the good practice examples and their detailed description. Chapter 6 gives a prospective of the further work steps of WP5.
2 Results of other Work Packages

2.1 Compilation and Structuring (WP1)

Within the task “Central Issues in Passenger Intermodality (D1)” relevant issues (“analysis dimensions”) of intermodal passenger travel were collected which should be addressed within the KITE project. Necessary elements for seamless travel will be identified either by analysing existing research studies or by the expertise and experiences of the parties involved. In whole 12 key issues have been summarised within WP1:

- Legal & Regulatory Framework,
- Coordination & Cooperation,
- Resources & Know How,
- Networks & Interchanges,
- Technical Issues,
- Demand,
- Products & Services,
- Promotion & Information,
- Booking & Ticketing,
- Luggage Handling,
- Safety & Security and
- Assessment & Evaluation.

These issues crossed with three dimensions ((a) passengers, (b) providers and (c) politics) result in a matrix that will allow to structure information and provide a basic organisation principle for the KITE knowledge base to be developed.

The following Table 2-1 contains exemplarily a description of the key issue “Networks and Interchanges” from the perspective of the passengers, providers and political decision makers. The intention of the brief description is to “exemplify what kind of topics will be subsumed under which key issues.” (KITE CONSORTIUM 2007, 10)
Table 2-1: Description of the key issue “Networks & Interchanges” from the perspective of the passengers, providers and political decision makers according to D1 - Central Issues in Passenger Intermodality

<table>
<thead>
<tr>
<th>Networks &amp; Interchanges from the perspective of …</th>
<th>… passengers</th>
<th>… providers</th>
<th>… political decision makers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key words</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility, connection, transfer, comfort</td>
<td>Cooperation, partners, planning, design</td>
<td>Interoperability</td>
<td></td>
</tr>
</tbody>
</table>

**Description**

- **… passengers**
  - The main focus is accessibility for passengers when changing from one mode of transport to another. Interchanging points between different transport networks, e.g. rail and fly, have to be available.

- **… providers**
  - The goal is to make interchanging points available through the cooperation of different providers. Therefore potential partners must be found and a high level of planning is required to optimise the transfer and waiting time.

- **… political decision makers**
  - On the network level the main issue is the interoperability of vehicles used and the standardisation of the infrastructure or a track sharing system between different modes and providers.

**Examples**

- Minimization of transfer and waiting time.
- Economic and administrative organisation of interchanges.
- Provide standards for integrated timetables, barrier free travelling

Each of the key issues named above will be addressed within the analysis of Good Practice Examples in WP5 (Table 2-2).

Table 2-2: Key issues of intermodal passenger travel defined within WP1 and comments on how these key issues are further considered within WP5

<table>
<thead>
<tr>
<th>Key issues defined within WP1</th>
<th>Comments on consideration within the KITE project WP5 (S1-Survey stage 1, S2 – Survey stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal &amp; Regulatory Framework</td>
<td>S2: legal framework</td>
</tr>
<tr>
<td>Coordination &amp; Cooperation</td>
<td>S2: involvement of stakeholders, key players during decision-making/planning/operation phase, contracts</td>
</tr>
<tr>
<td>Resources &amp; Know How</td>
<td>S2: quality management tools and strategies as well as barriers during the decision making process and the implementation phase, budget</td>
</tr>
<tr>
<td>Networks &amp; Interchanges</td>
<td>Mainly within the investigation of technical issues (S2)</td>
</tr>
<tr>
<td>Technical Issues</td>
<td>Mainly within the investigation of technical issues (S2)</td>
</tr>
<tr>
<td>Demands</td>
<td>S2: cooperation between key players</td>
</tr>
<tr>
<td>Key issues defined within WP1</td>
<td>Comments on consideration within the KITE project WP5 (S1-Survey stage 1, S2 – Survey stage 2)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Products &amp; Services</td>
<td>Mainly within the investigation of technical issues (S2), GPE-Analysis (S1)</td>
</tr>
<tr>
<td>Promotion &amp; Information</td>
<td>Mainly within the investigation of technical issues (S2), GPE-Analysis (S1)</td>
</tr>
<tr>
<td>Booking &amp; Ticketing</td>
<td>Mainly within the investigation of technical issues (S2), GPE-Analysis (S1)</td>
</tr>
<tr>
<td>Luggage Handling</td>
<td>Mainly within the investigation of technical issues (S2), GPE-Analysis (S1)</td>
</tr>
<tr>
<td>Safety &amp; Security</td>
<td>Mainly within the investigation of technical issues (S2)</td>
</tr>
<tr>
<td>Assessment &amp; Evaluation</td>
<td>S2: quality management tools and strategies as well as barriers during the decision making process and the implementation phase</td>
</tr>
</tbody>
</table>

The final strategy for detailed investigation will be developed within chapters 4 and 6.
3 State of the Art

Particularly at the end of the 1990s and at the beginning of this century research has been undertaken concerning intermodality, but rather in terms of freight transport than passenger transport. Table 3-1 gives an overview about European research projects that concerned intermodality with information about their project duration, whether they deal with freight transport and/or passenger transport, their treatment of the topic “interface” and the development of criteria or indicators. Furthermore, the table includes a short summary about the projects’ focuses and objectives to filter those projects most relevant for and related to KITE.

The afterwards following chapters summarise main results of most relevant previous research projects that defined specific criteria or appropriate and promising indicators more detailed usable for the KITE project. These projects are:

- GUIDE,
- MIMIC,
- CARISMA-Transport,
- Towards Passenger Intermodality in the EU and
- PIRATE.

All the examples of characteristics and issues presented in the following chapters show that there are many different ways of structuring and classification, which often reflect a different approach and questioning. From previous studies directly derivable consequences for the further proceeding in KITE are summarised and marked with “➡” within the text. The literature research as well as results from WP1 and WP3 form the basis for the development of own criteria and indicators to identify and evaluate Good Practice Examples.
### Table 3-1: Overview of research projects that concerned intermodality with their main objectives, duration and their contents

(freight/passenger transport, existence of report, treatment of the topic interface, development of criteria or indicators)

<table>
<thead>
<tr>
<th>title</th>
<th>Objectives</th>
<th>duration</th>
<th>freight</th>
<th>passenger</th>
<th>report</th>
<th>interface</th>
<th>criteria</th>
</tr>
</thead>
</table>
| CARGOSPEED  
(Cargo Rail Road Interchange at Speed) | CargoSpeed supports the sustainable flow of cargo from road to rail and addresses the congestion problems on the roads within Europe. The system reduces the costs for road/rail intermodalism and increases the speed of the operation at combined terminals. It halves the economic break-even distance for intermodal freight movements. The reduction of costs of the complete system in comparison to common techniques amounts to 30%. Outcome of the project are a prototype including a CargoSpeed rail-wagon and the transfer mechanism. A specific wellfloor for the wagon and a Pop-up lifting and turning mechanism was constructed and demonstrated. In order to achieve a reliable and cost efficient system a simulation and animation of the terminal was prepared and comprehensive dissemination and exploitation measurements are carried out. The marketability has been proven. | 01/01-07/04 | X | X | X | |
| CARISMA  
Concerted Action for the Interconnection of Networks | The aim of CARISMA was to identify good practice in the inter-connection of transport networks and to help build a consensus on how to tackle key issues, especially by looking from a local perspective at connections with the long-distance networks. | 12/97-06/00 | X | X | X | |
| CESAR  
Cooperative European System for Advanced Information Redistribution | The main objective of the CESAR project was to make intermodal transport more attractive by harmonising information exchange between CT operators and their clients. In particular, CESAR aimed to demonstrate how different systems can be virtually interconnected and offer standard client interfaces to the customers. | 12/96-12/99 | X | | | |
| CESAR II  
Cooperative European System for Advanced information Redistribution II | CESAR-II will identify, analyse and implement a pilot version of an extended system with broader modal coverage and improved service level. It will behave like a virtual company while maintaining accessible transport services of different operators. Under one single interface on the Web, the following functionalities will be developed: - European harmonised timetables, - Common tracking and tracing system, - Information in case of irregularities. | 01/00-12/02 | X | | | |
| CO-ACT  
(Creating Viable Concepts for Combined Air/Rail Cargo transport) | The main aim of the CO-ACT project was to identify and develop viable solutions for multi-modal cargo transport, with specific focus on the transportation of air- and time-critical cargo (for example flowers) by rail. The main objectives of CO-ACT were therefore the development of concepts for fast cargo-trains at a European level, and the development of inter-modal cargo-transport systems, thereby improving sustainable mobility. | 01/02-03/04 | X | | |
<table>
<thead>
<tr>
<th>Title</th>
<th>Objective</th>
<th>Duration</th>
<th>Freight</th>
<th>Passenger</th>
<th>Report</th>
<th>Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>COST 339</td>
<td>The main objective of COST 339 is to produce guidelines for governments, standardisation organisations, transportation associations and container manufacturers to assist in the developments of rules to cover the implementation of small containers that are usable throughout Europe. The final objective is to generate and deliver recommendations to the competent authority for standardisation (CEN/TC 119), based on the results of COST 339. It is also intended that the intermediate and final results of COST 339 will help to accelerate and simplify the requirements, specifications and standardisation processes necessary to enable the potential of intermodal transport systems to be realised as early as possible.</td>
<td>07/98-07/01</td>
<td>X</td>
<td></td>
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<tr>
<td>COST 340</td>
<td>The main objective of the Action is to contribute to the creation of a European intermodal transport network by defining a framework of references and concepts to guide current European policy in this area. This will be achieved by identification and analysis of the obstacles that transport intermodality has encountered to date. In order to propose methods for solving the most significant problems.</td>
<td>02/02-08/04</td>
<td>X</td>
<td>X</td>
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<tr>
<td>D2D</td>
<td>The major objective of D2D was to demonstrate how to efficiently organise and manage intermodal door-to-door transport chains, in which shipping plays a major role, by using logistics management and communication systems. Such systems would support and automate business transactions and information exchange between the different actors in the transport chains. The technology development and subsequent demonstrations of the technology and its real-life performances, has created a foundation for commercialization of the project results.</td>
<td>03/02-03/05</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>DATELINE</td>
<td>The project's four specific objectives have been to: - develop a survey design for long-distance passenger travel to be applied in all Member States addressing the needs of the respondent and implementing the state-of-the-art in travel behaviour surveys; - implement these surveys in all Member States; - create a database providing answers to planning related issues and provide input for analysis; - integrate this database in both a national context and in the Eurostat statistical programme.</td>
<td>04/00-06/03</td>
<td>X</td>
<td>X</td>
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<tr>
<td>EMOLITE</td>
<td>EMOLITE aimed to support the development of modern European intermodal transport networks by integrating all relevant supply and demand requirements of intermodal distribution and transhipment centres, as well as passenger terminals, into a decision support system.</td>
<td>01/97-02/99</td>
<td>X</td>
<td>X</td>
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<tr>
<td>title</td>
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<td>passenger</td>
<td>report</td>
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<tr>
<td>EUROBORDER</td>
<td>EUROBORDER focused specifically on small and medium sized ports and on port terminals as the node in the transport chain. The aim was to study potential improvements in information exchange, the organisational structure and administrative routines in the terminal and relations with its customers and the rest of the port community.</td>
<td>03/96-06/98</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>EUROSIL</td>
<td>EUROSIL aimed to develop robust guidelines to support decision-making on TEN-T and other transport investments, which would take into account the impacts of multi-modal links on regional development.</td>
<td>01/97-10/99</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIFTS</td>
<td>The main GIFTS aim was to design and develop, for the pilot cases, a fully-integrated operational platform, referred to in this document as the GIFTS Integrated operational Platform GIP for the use of systems that manage door-to-door freight transport both intermodally and unimodally.</td>
<td>04/02-03/05</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>GUIDE</td>
<td>The main objective of GUIDE was to develop and disseminate guidance on good practice in the functional specification and design aspects of passenger interchanges, based on case study evidence, both for the network-wide level and for the individual location level.</td>
<td>01/98-03/99</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>HSR-COMET</td>
<td>HSR-COMET aimed to provide a comprehensive analysis of demand for high-speed rail services, particularly concerning the needs for modal interconnection at HSR terminals, in order to guide further research and policy action in this area.</td>
<td>01/96-03/97</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>IDIOMA</td>
<td>The main project objective was to demonstrate different concepts aimed to improve the distribution of goods within urban areas and between intermodal terminals/freight centres and urban areas. Specific objectives of the project were to implement and assess in five sites (Nürnberg in Germany, the Öresund region, the Île de France, the Randstad agglomeration in The Netherlands and Zürich).</td>
<td>12/98-05/01</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IMPULSE</td>
<td>The project's key objective is to determine, introduce and recommend focused technical as well as logistics developments which will result in increased economic, technical and management efficiency of intermodal transport to deliver trans European freight at lower cost, within a quality framework, while meeting the customers' needs. IMPULSE focuses on rail aspects in connection with the other modes.</td>
<td>02/96-06/99</td>
<td>X</td>
<td></td>
<td>X</td>
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</tr>
<tr>
<td>Title</td>
<td>Objective</td>
<td>Duration</td>
<td>Freight</td>
<td>Passenger</td>
<td>Report</td>
<td>Interface</td>
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<tr>
<td>INFOLOG (Intermodal Information Link for Improved Logistics)</td>
<td>The goal of the INFOLOG project was to improve the efficiency of intermodal transport based on waterborne and rail transport, through improved communication/information possibilities. The specific objective was to achieve interoperability between information systems by proposing and demonstrating standardised solutions to integrate Electronic Data Interchange (EDI) and other methods of information exchange along intermodal transport chains.</td>
<td>01/98-12/99</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERCEPT (Intermodal Concepts in European Passenger Transport)</td>
<td>The main project aim was to develop, integrate and demonstrate in three sites (Barcelona, Bremen and Bristol) a series of measures based on integrated transport telematics applications to support strategies for promoting passenger intermodality in urban areas.</td>
<td>12/98-11/00</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>INTERMODA (Integrated Solutions for Intermodal Transport between the EU and the CEECs)</td>
<td>The objective of the project is the definition of an intermodal transport network for goods transport between EU and CEECs (rail, road, inland waterways, short sea shipping). In order to achieve this aim the identification of a Pan-European intermodal transport network, the specification of technical performance indicators, market determinants and parameters for regulatory framework conditions, analysis and assessment of status quo and forecast on future demand (horizon 2015) are needed.</td>
<td>12/01-08/03</td>
<td>X</td>
<td>X</td>
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<tr>
<td>IP (Intermodal Portal)</td>
<td>The IP Project will improve the integration of ports into intermodal transport chains by harmonising administrational procedures, offering a set of information and communication (ICT) tools as well as services for easing the mandatory data supply and the data delivery to other partners in the chain. This will be done by integrating results of previously successful RTD projects and industrial strength solutions into a large scale demonstration covering 20 of the major seaports all over Europe (from Finland to Greece). Ports should act as service providers (reliable and easy-to-use nodes) in the chain with a minimum set of standard procedures and ICT links for receiving required information and providing sufficient and high quality data being fundamental for the monitoring and further planning of the chains.</td>
<td>01/00-12/01</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>IPSI (Improved Port/Ship Interface)</td>
<td>The objective of the IPSI project was to develop new concepts for efficient port/ship interfaces in order to make SSS the best choice for as large a share as possible of the total transport distance. The focus of the project was the cargo handling system and new vessel designs were developed to improve cargo loading and unloading operations.</td>
<td>04/96-04/99</td>
<td>X</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>IQ (Intermodal Quality)</td>
<td>IQ aimed to analyse the quality aspects influencing intermodal transport, focusing on improvements in interoperability, interconnectivity and accessibility of terminals. The project intended to deal with both the quality of terminals and the quality of networks for different countries and segments, at European and national levels.</td>
<td>02/96-12/99</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Title</td>
<td>objective</td>
<td>duration</td>
<td>freight</td>
<td>passenger</td>
<td>report</td>
<td>interface</td>
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<tr>
<td>LEONARDO</td>
<td>The main objective of LEONARDO is to define the method and demonstrate the feasibility of integrating existing tools for arrival, surface and departure planning management together with those derived from the stand allocation management and the turn-around management. This objective will be achieved by performing a full-scale integration of these tools at Barajas and Charles de Gaulle airports under real operating conditions.</td>
<td>02/00-10/04</td>
<td>X</td>
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</tr>
<tr>
<td>LOGIQ</td>
<td>LOGIQ aimed to identify actors in the decision-making process on the use of intermodal transport and to provide information on criteria and constraints employed by them. Three key variables to be considered were the infrastructure networks, quality factors, and the institutional and legal environment.</td>
<td>01/98-09/99</td>
<td>X</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>MIMIC</td>
<td>MIMIC aimed to provide policy-makers and developers with guidelines for design, planning and management of passenger interchanges. The guidelines were to cover four main areas: the relative importance of the various factors that determine travellers’ choice of modes, including both the interchange characteristics and aspects of the overall trip; the impact of the interchange catchment area and feeder services on the success of the interchange site; the types of barriers for the different actors involved, and their relative importance; the development, implementation and assessment of site-specific solutions.</td>
<td>01/98-06/99</td>
<td>X</td>
<td>X X X</td>
<td></td>
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</tr>
<tr>
<td>MINIMISE</td>
<td>MINIMISE aimed to analyse the European transport market as a whole and to design specific measures in order to promote the interoperability and economic efficiency of the trans-European transport system.</td>
<td>02/96-02/99</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>OSIRIS</td>
<td>OSIRIS will produce a model solution to the bottleneck and storage problems through the development of integrated rail connections to seaports, furthermore the planning of a hub and spoke system between different seaports and the economic regions in their hinterland will be examined. It focuses on user requirements, transport demand, intermodal terminal concepts (in the seaport, hinterland and hub), rail transport, business structure and services offered. It also identifies requirements for an information and communications (I&amp;C) system supporting the business process and the terminal operation.</td>
<td>01/97-03/98</td>
<td>X</td>
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<tr>
<td>PIRATE</td>
<td>PIRATE aimed to analyse a sample of European interchanges to assess the extent and efficiency with which the needs of the various stakeholders are actually being met, the project aspired to develop and test an innovative approach to defining and providing for those needs. This approach would directly involve stakeholders in the improvement or redevelopment of interchanges.</td>
<td>01/98-06/99</td>
<td>X X X</td>
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</tr>
<tr>
<td>title</td>
<td>objective</td>
<td>duration</td>
<td>freight</td>
<td>passenger</td>
<td>report</td>
<td>interface</td>
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<tr>
<td>RECORDIT (Real Cost Reduction of Door-to-door Intermodal Transport)</td>
<td>The main objective of RECORDIT is to improve the competitiveness of intermodal freight transport in Europe through the reduction of cost and price barriers which currently hinder its development while respecting the principle of sustainable mobility.</td>
<td>01/00-06/02</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEMM (Strategic European Multi-Modal Modelling)</td>
<td>The objectives of STEMM were to: - develop models of intermodal transport; - identify barriers to intermodality and appropriate policy actions; - examine the effects of these policies through modelled case studies.</td>
<td>03/96-06/98</td>
<td>X</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>SWITCH (Sustainable, workable intermodal transport choices)</td>
<td>The aim of SWITCH was to demonstrate good practice in the provision of intermodal passenger transport, to assess the impacts on transport operation, traveller behaviour, the environment and economic performance.</td>
<td>01/99-12/00</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TACTICS (The Automated Conveying and Transfer of Intermodal Cargo Shipments)</td>
<td>TACTICS aims to demonstrate that the loading bay and intermodal transfer of palletised goods can be fully automated, electronically managed and networked into computer based logistics within existing transport systems. Under this system, goods can be packed at source and delivered in returnable packaging in a fully automated cycle. In addition to improved efficiency (such as more effective use of vehicles and warehousing, fast intermodal transfer and reduced material handling), the transfer of goods in an uninterrupted recyclable intermodal distribution chain would also bring benefits in terms of reduced consumption of fuels and packaging, reduced traffic congestion and pollution as well as reduced impact of freight traffic on the urban environment.</td>
<td>01/98-03/99</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THEMIS Thematic Network in the Optimal Management of Intermodal Transportation Services</td>
<td>The prime objective of THEMIS is to coordinate ongoing and past activities of research and development in the field of Information Systems in Intermodal Freight Transport in Europe by providing at the same time a forum for dissemination and concertation activities among all parties concerned. THEMIS’ area of work has been defined as the planning and operation functions of Freight Transport within the future European Intelligent Transport Systems (ITS). THEMIS will attempt to define the position of European Freight Transport within the ITS infrastructure that is being developed by utilising technologies and applying innovative logistics concepts in order to contribute to a rebalancing and integration of the different transport modes into intermodal transport chains. Of the various ITS applications and areas of development, THEMIS is focusing by way of priority into the relation and integration of the new ITS based Traffic Management Systems (TMS) with the Freight Transport Management Systems operation (FTMS).</td>
<td>04/00-03/04</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>title</td>
<td>objective</td>
<td>duration</td>
<td>freight</td>
<td>passenger</td>
<td>report</td>
<td>interface</td>
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</tr>
<tr>
<td>TERMINET</td>
<td>TERMINET aimed to identify promising and innovative directions for bundling networks, new generation terminals as well as terminal nodes for combined unimodal and intermodal transport in Europe.</td>
<td>01/97-12/99</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Towards Passenger Intermodality in the EU</td>
<td>The study was commissioned to create the basis for an EU work plan in the field of passenger intermodality aiming at the enhancement of passenger intermodality in Europe for long distance and cross-border transport.</td>
<td>01/04-12/04</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>VOYAGER</td>
<td>The VOYAGER project aimed to consolidate current experience and to create a vision and make recommendations for the implementation of attractive, clean, safe, accessible, effective, efficient and financially viable European local and regional public transport systems for the year 2020. As a thematic network activity, the project’s objective was to gather practitioners’ input to assess whether results of current research and development are known by the stakeholders and whether these meet the needs of the sector.</td>
<td>09/01-12/04</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

National Projects

<table>
<thead>
<tr>
<th>title</th>
<th>objective</th>
<th>duration</th>
<th>freight</th>
<th>passenger</th>
<th>report</th>
<th>interface</th>
<th>criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFFIT</td>
<td>The objectives of the project are to develop intermodal transhipment centres with respect to sustainability and efficiency in cargo handling in the terminal and towards connecting transport systems by sea, rail and road.</td>
<td>12/03-12/05</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
3.1 GUIDE – Urban Interchanges – A Good Practice Guide

The project GUIDE (Group for Urban Interchanges Development & Evaluation) was funded by the European Commission under the Transport RTD Programme of the 4th Framework Programme and had duration from January 1998 until August 1999. Amongst others, main objectives of the project were to

- identify existing European research and practice concerning urban interchanges,
- to create a framework for collaborative research amongst European public transport operators on issues concerned with improving passenger interchange;
- to assess best practice in terms of functional specification and design of interchanges by means of a peer group review of selected case studies and
- to prepare a good practice guide for urban interchanges (GUIDE CONSORTIUM 2000).

A number of “distinct aspects” of interchanges were found out to be of relevance for the seamlessness of the public transport system:

- Overall design and layout,
- Accessibility and linkages with the surrounding urban area,
- Facilities,
- Image,
- Information,
- Signage,
- Personal security,
- Operational safety.

According to the recommendations of the Group for Urban Interchanges Development and Evaluation for improving interchanges at individual interchange locations, following principles of good practice could be derived and summarized (Table 3-2). The aspects concern mostly physical attributes of urban interchanges.
Table 3-2: List of aspects of interchanges according to the GUIDE CONSORTIUM 2000 (chapter improving interchange at individual interchange locations), derived principles

<table>
<thead>
<tr>
<th>Aspects of interchanges</th>
<th>Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall design and layout</strong></td>
<td></td>
</tr>
<tr>
<td>Overall arrangement</td>
<td></td>
</tr>
<tr>
<td>Location of services and platforms</td>
<td>Visual connections for passengers from different positions e.g. due to surface/elevated situations, use of glass</td>
</tr>
<tr>
<td>Location of facilities</td>
<td>Logical progression for principal user group</td>
</tr>
<tr>
<td>Light and space</td>
<td>Maximisation (high ceilings, natural light)</td>
</tr>
<tr>
<td>Walk links between service (un-)loading points, platform- and street entrances</td>
<td></td>
</tr>
<tr>
<td>Walking distance</td>
<td>Minimisation</td>
</tr>
<tr>
<td>Changes in levels, existence of steps</td>
<td>Minimisation, especially for mobility impaired (e.g. wheelchair-bound, blind, parents with children, passenger with luggage/carriers, lack agility)</td>
</tr>
<tr>
<td>Directness of routes</td>
<td>Maximisation (avoid changes in directions)</td>
</tr>
<tr>
<td>Space management</td>
<td></td>
</tr>
<tr>
<td>Layout of spaces</td>
<td>Facilitation of efficient supervision by staff and staff visibility to passengers</td>
</tr>
<tr>
<td><strong>Local accessibility and Linkages with surrounding area</strong></td>
<td></td>
</tr>
<tr>
<td>Setting the interchange in its urban context</td>
<td></td>
</tr>
<tr>
<td>Density/activity near interchanges</td>
<td>Orientation of redevelopment opportunities</td>
</tr>
<tr>
<td>Walking distances to/from transport services</td>
<td>Minimisation</td>
</tr>
<tr>
<td>Street furniture (Guard-rails, kerbs, crossings)</td>
<td>Facilitation of straight-line pedestrian access</td>
</tr>
<tr>
<td>Incorporation into other built structures</td>
<td>Right balance between incorporation into other built structures and own street presence</td>
</tr>
<tr>
<td>Designing access to the interchange by all relevant modes</td>
<td></td>
</tr>
<tr>
<td>Access modes</td>
<td>Provision of facilities for taxis, cars (kiss&amp;ride, park&amp;ride), cycles, buses</td>
</tr>
<tr>
<td>Homogenous entity</td>
<td>Minimisation of barriers through severances, pedestrian through routes</td>
</tr>
<tr>
<td>Signage, promotion and information</td>
<td>Seamless signage and real-time information systems over the whole area (within and outside the interchange)</td>
</tr>
</tbody>
</table>
### Aspects of interchanges | Principles

#### Facilities

<table>
<thead>
<tr>
<th>Travel related</th>
<th>Shelter, waiting areas, toilets, luggage trolleys, storage, ticket sales outlets, car-/cycle-parking, taxi ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific recommendations in terms of number and standard, “Levels of facilities are established at a network level through standards applied to a classification of interchanges (size, journey served)”</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other</th>
<th>Retail outlets, automatic vending machines, cash points, telephones, café/buffet, shoe-repair/key-cutting kiosk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Depend in large part on overall design, local accessibility/linkages with surrounding area, signage and security</td>
</tr>
</tbody>
</table>

#### Image

| Extent to which the passenger will feel welcomed and comfortable being associated with | Depends in large part on overall design, local accessibility/linkages with surrounding area, signage and security |

#### Information

<table>
<thead>
<tr>
<th>Amount of information</th>
<th>Minimum requirement of line diagram/map of services, timetable location map showing other stops in the area and local features, plus system map, fare system descriptor, remote help points, staffed inquiry facilities/information desks (possibly combined with ticket sales), no overload with non travel-related information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labelling and design</td>
<td>Consistent convention for the labelling and design of all forms of static information needs</td>
</tr>
<tr>
<td>Real time information</td>
<td>Departure boards. Computer-driven displays at bus stops/rail platforms, help-points and inquiry bureaus, call centres, internet, computer terminals</td>
</tr>
</tbody>
</table>

#### Signage

<table>
<thead>
<tr>
<th>Amount</th>
<th>Including all public transport modes (incl. taxis), provision for cycle facilities, car parking, full range of facilities, toilets, information points, telephones, shops etc., but avoiding information overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Pictograms, colour schemes, font designs, sizes standardised (use of standards developed by operators/governments if available)</td>
</tr>
<tr>
<td>Placement</td>
<td>All significant pedestrian movements to, from and between the public-transport modes, reassurance that mid-journey passengers head the right direction</td>
</tr>
<tr>
<td>Aspects of interchanges</td>
<td>Principles</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Personal security</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td></td>
</tr>
<tr>
<td>(Uniformed) Staff presence</td>
<td>Combination of basic security duties with customer care is often preferred</td>
</tr>
<tr>
<td>Police presence</td>
<td>Important part of the arsenal to combat crime and boost the feeling of security</td>
</tr>
<tr>
<td><strong>Technical features</strong></td>
<td></td>
</tr>
<tr>
<td>Efficient and safe gates, control barriers</td>
<td>No general or specific recommendation on the subject, named as “Cost effective measures”</td>
</tr>
<tr>
<td>CCTV, help points</td>
<td></td>
</tr>
<tr>
<td><strong>Design features</strong></td>
<td></td>
</tr>
<tr>
<td>Architectural principles, construction materials</td>
<td>Transparency (horizontal and vertical), brightness, short and wide passageways, access to all areas with clear lines of visibility etc.</td>
</tr>
<tr>
<td>Pleasant environment</td>
<td>Cleanliness, good lighting, modern facilities working and presented in good order supports the feeling of security</td>
</tr>
<tr>
<td><strong>Operational Safety (health and safety)</strong></td>
<td></td>
</tr>
<tr>
<td>Movement of people and their waiting in normal or abnormal operating conditions</td>
<td></td>
</tr>
<tr>
<td>Provision to control overcrowding</td>
<td></td>
</tr>
<tr>
<td>Sizing/treatment of surfaces, concourse, ramps, escalators etc.</td>
<td>No general or specific recommendations on the subject, but reference to national “health and safety” guidelines published by statutory bodies</td>
</tr>
<tr>
<td>Suitability of escalators, lifts, conveyors</td>
<td></td>
</tr>
<tr>
<td>Number and size of exits, halls, etc.</td>
<td></td>
</tr>
<tr>
<td>Ventilation, lighting etc.</td>
<td></td>
</tr>
</tbody>
</table>

It is pointed out by the GUIDE Consortium that there are a number of interactions between these aspects of interchanges.

⇒ **KITE (WP5):** The key aspects of interchanges developed within the research project GUIDE concern mainly physical attributes of interchanges which are the most
tangible way of increasing the seamlessness of such public transport systems and therefore the quality of a journey from the GUIDE’s point of view. The partly very concrete recommendations given within the GUIDE practice guide can be used for the evaluation of GPE within KITE and further, as issues within the in-depth survey with operators and persons responsible for different services.

3.2 MIMIC - Mobility, InterModality and InterChanges

The acronym MIMIC stands for Mobility, InterModality and InterChanges. The project had a duration from January 1998 until June 1999 and was - like GUIDE - funded by the European Commission under the Transport RTD Programme of the 4th Framework Programme. MIMIC aimed to provide guidelines for design, planning and management of passenger interchanges for policy-makers and developers. The guidelines should cover four main areas:

- the relative importance of the various factors that determine travellers' choice of modes, including both the interchange characteristics and aspects of the overall trip;
- the impact of the interchange catchment area and feeder services on the success of the interchange site;
- the types of barriers for the different actors involved and their relative importance;
- the development, implementation and assessment of site-specific solutions.

Barriers

The main focus of MIMIC was to explore barriers to intermodality, with ‘barriers’ defined as all those interchange-specific factors that influence travellers to choose single-mode options instead of intermodal ones. Seven groups of barriers have been subdivided:

- logistical and operational,
- psychological,
- institutional and organisational,
- physical design,
Those barriers are analysed from different perspectives: users, non-users, local authorities, planners, transport operators, disabled, elderly and other groups. Many common barriers have been identified (Table 3-3).

Table 3-3: Common barriers that influence travellers to choose single-mode options from the perspective of users, disabled persons and service operators identified within the research project MIMIC

<table>
<thead>
<tr>
<th>Barriers from the perspective of …</th>
<th>… users</th>
<th>… disabled persons</th>
<th>… service operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>poor information on service delay,</td>
<td>access to vehicles,</td>
<td>lack of integration and coordination</td>
<td></td>
</tr>
<tr>
<td>poor information for journey planning,</td>
<td>access to information,</td>
<td>fear for personal security</td>
<td></td>
</tr>
<tr>
<td>queuing for tickets,</td>
<td>long distances between modes,</td>
<td>difficult access for the disabled.</td>
<td></td>
</tr>
<tr>
<td>fear of crime, etc.</td>
<td>inadequate lighting.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

⇒ **KITE (WP5):** The barriers from the (handicapped) users’ point of view will be addressed indirectly by the derivation of standard user requirements due to the GPE-Analysis and due to the “technical issues” within the in-depth survey of the KITE project. Barriers from the perspective of the operators and strategies to overcome themselves during the planning, implementation and operation phase are also a key issue within the in-depth survey.

**Door-to-door-factors**

Based on the conclusion that travellers give great importance to the interchange when they choose whether to make or not to make intermodal trips ten relevant “door-to-door-factors” were identified (Table 3-4). They have been subdivided into two types: factors characteristic of the whole trip (e.g. waiting time, service reliability) and factors characteristic of the interchange (e.g. security, information on service delays).
Table 3-4: Relevant door-to-door-factors and their typology (relevance for the trip or the interchange) identified within the research project MIMIC to be relevant for travellers’ choice whether or not to make intermodal trips

<table>
<thead>
<tr>
<th>Door-to-door factors</th>
<th>Typology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information on service delays</td>
<td>Interchange</td>
</tr>
<tr>
<td>Security</td>
<td>Interchange</td>
</tr>
<tr>
<td>Information on routes and maps</td>
<td>Interchange</td>
</tr>
<tr>
<td>Lack of ticket machines</td>
<td>Interchange</td>
</tr>
<tr>
<td>Stairs</td>
<td>Interchange</td>
</tr>
<tr>
<td>Weather protection</td>
<td>Interchange</td>
</tr>
<tr>
<td>Waiting time</td>
<td>Trip</td>
</tr>
<tr>
<td>Service reliability</td>
<td>Trip</td>
</tr>
<tr>
<td>Connections from the station to the final destination</td>
<td>Trip</td>
</tr>
<tr>
<td>Traffic jam</td>
<td>Trip</td>
</tr>
</tbody>
</table>

The MIMIC-consortium pointed out, that six out of ten factors are ‘interchange’ factors; moreover “it should be noted that also ‘waiting time’ and ‘service reliability’, even if classified as ‘trip’ factors, are strictly related to an efficient interchange between transport modes. This result confirms the importance of the interchange as a key element in intermodal choices.” (MIMIC CONSORTIUM 1999, 96)

➡️ KITE (WP5): All of the MIMIC door-to-door factors of the interchange type and all possible trip type door-to-door factors will be addressed within the evaluation of the GPE and the in-depth survey.

3.3 CARISMA-Transport

Main objective of the research project CARISMA-Transport (Concerted Action for the Interconnection of Transport Systems in the Member States in Association with the European Commission) was to “investigate the interaction between and facilitated the interconnection of long-distance transport networks (e.g. Trans-European Networks) with local and regional transport networks” (CARISMA-Transport CONSORTIUM 2000, 2). The project concentrated on internal transport as well as on road-to-public transport interchanges. The requirements for successful implementation and operation...
of long distance inter-modal interchange terminals are summarised and specified under the following two categories:

- interchange requirements for seamless travel and
- policy environments.

Due to the project, no common standards for the provision of seamless multimodal journeys respectively quality criteria for interchanges were defined.

**Interchange Requirements for Seamless Travel**

Recommendations regarding to interchange requirements for seamless travel can roughly be subdivided to recommendations regarding physical design, operation of transport services, additional services and provision of information according to CARISMA 2000:

**Physical design**

- Walking distance should be as short as possible when changing vehicles.
- Escalators and elevators should be provided for comfort and speed.
- Visibility axis between main destinations (platforms, entrances and exits) within the stations improves orientation and safety.
- Protection from the elements should be self-evident.
- Accessibility for handicapped and elderly passengers should be guaranteed.
- Natural and artificial light and cleanliness improve the feeling of safety and comfort.
- Generous space on platforms and in aisles makes passengers feel comfortable.

**Operation of transport services**

Recommendations on successful operation of connecting transport services are as follows:

- Harmonised schedules of all modes available at the interchange to provide for short transfer and waiting times.
- Through ticketing in multimodal networks, including long-distance and local/regional services, is an essential to seamless travel.
- Proper access to and from the complete system is required to provide door-to-door travel.
- Flexible, multimodal handling of any system interruptions consisting of information, substitute services, additional individual support and reimbursement.
- Telematics should be applied as a tool for assisting in getting transport - in particular public transport organisation, services and prices - more in line with user requirements.

Additional services
From the operators’ view, retail and services provide additional revenues to the operation of the interchange:
- Linked schedules and short waiting times are more important to travellers than generous services and shopping facilities.
- Commercial activities inside the interchange can spread out to ignite or regenerate economic progress around the site.

Provision of information
- Information must be (perceived to be) accurate and travellers must be able to act on this information.
- Multilingual information must be available both outside and inside vehicles and interchanges. Clear orientation within interchanges is essential.
- Information may not be limited to individual modes or operators. Real-time information systems are recommended to help in journey planning and improving connections at interchange points.
- Information systems are required which combine static and dynamic data on public and private modes (trip planning systems).

Policy Environments
According to CARISMA 2000 recommendations concerning policy environments can be assigned to three areas of concern: administrative responsibility for long distance to
regional and local network interchanges, financial responsibility and frameworks for successful, cooperative, multimodal operation of public transport. The following comments contain the most important recommendations for interchanges connecting networks of different modes.

**Administrative responsibility**
- Harmonisation of organisational structures and the regulatory framework within member countries and the EU.
- Strengthening of public involvement in planning procedures.

**Financial responsibility**
- Financial responsibility for interchanges needs to be defined in parallel to administrative responsibility.

**Frameworks for successful, cooperative, multimodal operation**
- Deregulation will not facilitate smooth and seamless travel in urban areas. On the contrary, strong legislative and planning frameworks are necessary to provide an inter-operable, user-friendly, coordinated public transport system operated by a multitude of competing private operators.
- Local and regional public transport can benefit from privatisation.
- Special attention must be given to the cooperation of long-distance and local/regional operators. Legislative framework should guarantee a minimum level of cooperation concerning coordinated time schedules and fares.
- Legislative grounds for a successful public private partnership should be provided.
- The interconnectivity and interoperability of transport networks need to be improved.

**KITE (WP5):** These requirements for successful implementation and operation of long distance inter-modal interchange terminals are helpful for the derivation of quality
standards (guidelines D14) and passenger related services that will be further analysed within the in-depth KITE survey.

3.4 Towards Passenger Intermodality in the EU

The study “Towards Passenger Intermodality in the EU” (duration 01/2004-12/2004) was commissioned to create the basis for an EU work plan in the field of passenger intermodality, aiming at the enhancement of passenger intermodality in Europe for long distance and cross-border transport. Within the project, the current status of passenger intermodality and key issues of intermodal travel have been examined to identify major barriers for the implementation of intermodal solutions.

Key issues of passenger intermodality

The inventory phase of this project brought a “list of 39 key issues of passenger intermodality that should be addressed since they can favour or hinder the realisation of high quality passenger intermodality at the European level” (TOWARDS PASSENGER INTERMODALITY IN THE EU 2004, 59). The 39 issues are classified under the following three domains:

- A. Context or framework conditions for realising passenger intermodality
- B. Products and services linked with passenger intermodality
- C. Implementation issues

Each domain consists of several categories. The following Table 3-5 shows the list of key issues (and categories) of passenger intermodality and comments on how these key issues are also considered within the KITE project.
Table 3-5: List of key issues of passenger intermodality according to TOWARDS PASSENGER INTERMODALITY IN THE EU 2004, Annex and comments on how these key issues are considered within the KITE project

<table>
<thead>
<tr>
<th>No.</th>
<th>Domain</th>
<th>Category and Key Issue (by key word)</th>
<th>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A. Context or framework conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Market</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1   | A. Context or framework conditions         | Modal Split, travel behaviour with regard to intermodality | Modal split according to access and egress of the interchange  
|     |                                             |                                      | Modal split according to long distance travel  
<p>|     |                                             |                                      | …as an indicator for the CBA (WP4) |
| 2   | A. Context or framework conditions         | Market weakness of intermodal travel |                                                                                          |
| 3   | A. Context or framework conditions         | Market segmentation                  |                                                                                          |
| 4   | A. Context or framework conditions         | European vs. national long-distance intermodality |                                                                                          |
| 5   | A. Context or framework conditions         | Modal conflicts and operator priorities | S2: Coordination and cooperation |
| 6   | A. Context or framework conditions         | Disaggregated ownership               | S2: Coordination and cooperation |
| 7   | A. Context or framework conditions         | Impact of competition models          |                                                                                          |
| 8   | Assessment                                  | European long-distance travel models  | KITE WP2 |
| 9   | Assessment                                  | Cost-Benefit analyses                 | KITE WP4 |
| 10  | Assessment                                  | Problems of political will and lobby for intermodality | S2: questions concerning the involvement of stakeholders |
| 11  | Assessment                                  | EU policy and activities              |                                                                                          |
| 12  | Assessment                                  | National, regional and local policies as well as priorities with regard to intermodality |                                                                                          |
| 13  | Assessment                                  | Policy consistency (between states, regions etc.) |                                                                                          |
| 14  | Assessment                                  | Preferred modal combinations          |                                                                                          |
| 15  | Assessment                                  | Key Players (interests, power)        | S2: questions concerning the involvement of stakeholders, key players during decision-making/planning/operation phase |
| 16  | Assessment                                  | Legal framework                       | S2: questions concerning the legal framework |
| 17  | Assessment                                  | Mega trends (demographic change etc.)  |                                                                                          |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Domain</th>
<th>Category and Key Issue (by key word)</th>
<th>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>B. Products and Services</td>
<td>Status of (intermodal) infrastructure</td>
<td>Dealt with in GPE, detailed questions within S2</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td>Integrated networks, interoperability</td>
<td>Dealt with in GPE, detailed questions within S2</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>Interchanges: location, accessibility, services, orientation, transfer/waiting, security, management etc.</td>
<td>Partly already addressed in GPE and S1; to be explored in S2 more detailed</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td>Integration of transport services, timetables</td>
<td>S2: Coordination and cooperation between operators/key actors and within the investigation of technical issues</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>Information: range/integration, accessibility/channels, real time/dynamic</td>
<td>S1/S2: Information within the investigation of technical issues</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>Marketing</td>
<td>S2: Customers’ satisfaction (quality management tools and strategies)</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>Ticketing/fares, booking/payment</td>
<td>S1/S2: Ticketing within the investigation of technical issues</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>Luggage handling</td>
<td>S1/S2: Luggage within the investigation of technical issues</td>
</tr>
<tr>
<td>26</td>
<td>C. Implementation</td>
<td>User needs assessment</td>
<td>S2: public involvement in planning procedures; customers’ satisfaction (quality management tools)</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td>Network level planning</td>
<td>S2: Coordination and cooperation, investigation of technical issues</td>
</tr>
<tr>
<td>28</td>
<td></td>
<td>Integration with land use</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td>Institutional structures (with regard to cooperation)</td>
<td>S2: questions concerning the involvement of stakeholders, key players during implementation phase</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>Operations/Management</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>Cooperation operators - authorities</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td></td>
<td>Cross border cooperation</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>Data sharing (institutional aspect)</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Domain</td>
<td>Category and Key Issue (by key word)</td>
<td>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</td>
</tr>
<tr>
<td>-----</td>
<td>--------</td>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td></td>
<td>Joint/mixed financing (public-public, public-private, several operators etc.) and business case</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td>European and national funding structures and levers (compatibility with inter-modality projects)</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td></td>
<td>Human resources and institutions to implement intermodality concepts, training and education</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td></td>
<td>Standardisation</td>
<td>Research from other studies, results of WP1 and WP3, S2: investigation of technical issues</td>
</tr>
<tr>
<td>38</td>
<td></td>
<td>Interfaces to integrate existing products/services, procedures</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td></td>
<td>Data exchange (technical aspect)</td>
<td></td>
</tr>
</tbody>
</table>

**Major implementation gaps in European Intermodality concerning Services and Infrastructure for Passengers’ Intermodality**

Within the project common major implementation gaps in Europe concerning intermodal services and networks/interchanges were analysed. “The following items are either almost without implementation across Europe or restricted to specific countries” (TOWARDS PASSENGER INTERMODALITY IN THE EU 2004, 55)

**Intermodal services**

- One-stop-shop information, book and pay for intermodal journeys of any kind at national level
- Fully integrated international – national – local information systems
- National real-time public transport information systems
- Integrated walking and cycling information in information systems
- Fully integrated road and PT information systems
- Intermodal information on delays and disruptions
- Intermodal luggage management and door-to-door luggage services in air/rail and urban transport
- (Standard) smart card integrated ticketing systems at national and European levels

**Networks and interchanges**

- Intermodal management of disruptions and delays
- High levels of personal security in and around interchanges
- High quality of interchanges and facilities
- Interchanges designed with short walking distances
- Secure cycling and motorcycle parking
- Park & Ride for long-distance travellers at urban interchanges
- Accessible interfaces between rail and urban modes at interchanges
- Rail links to regional airports
- Quality rail infrastructure in candidate countries

➤ A comparison with the KITE Catalogue of Best-Practice Implementation Examples and the WIKI database may show that some of the features named above have already been implemented (e.g. in Switzerland: Intermodal luggage management and door-to-door luggage services in air/rail and urban transport).

**Implementation Barriers leading to gaps in European Intermodality**

Beside the objective of analysing possible gaps in European intermodality, causative implementation related barriers should also be identified within the analysis phase of the project. “Political and policy support for intermodality is getting stronger, but successful strategies for implementing the vision are less apparent. The sparseness of implementation is mostly caused by intransigent problems of:

- Coordination and cooperation,
- Legal and regulatory issues,
- Financing and resources and
- the practical implementation of standard solutions in design (technical issues), which meet real user needs.” (TOWARDS PASSENGER INTERMODALITY IN THE EU 2004, 56)

Table 3-6 contains a list of main implementation barriers identified for services and infrastructure that are difficult to overcome.

Table 3-6: Implementation barriers identified within the project (TOWARDS PASSENGER INTERMODALITY IN THE EU 2004, 56) and comments on how these key issues are also considered within the KITE project

<table>
<thead>
<tr>
<th>Implementation barriers</th>
<th>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Political support, policy basis</strong></td>
<td></td>
</tr>
<tr>
<td>Policy conflicts: National and local level</td>
<td></td>
</tr>
<tr>
<td>Inconsistent power of lobby support for different modes and intermodality</td>
<td>S2: questions concerning the involvement of stakeholders, key players during the decision making process and the implementation phase</td>
</tr>
<tr>
<td>No policy for low-cost airlines</td>
<td></td>
</tr>
<tr>
<td>Lack of data and data collection on intermodality</td>
<td></td>
</tr>
<tr>
<td><strong>Planning and design</strong></td>
<td></td>
</tr>
<tr>
<td>Acknowledging user-needs for interchanges, information systems and ticketing</td>
<td>S1/S2: Information within the investigation of technical issues</td>
</tr>
<tr>
<td>inconsistent and lacking assessment, evaluation and monitoring methods</td>
<td>S2: Customers’ satisfaction (quality management tools and strategies) and barriers during the decision making process and the implementation phase</td>
</tr>
<tr>
<td>Deficiencies in interchange design</td>
<td>S1/S2: Information within the investigation of technical issues and barriers during the decision making process and the implementation phase, legal framework</td>
</tr>
<tr>
<td>Lack of network level planning of interchanges</td>
<td></td>
</tr>
<tr>
<td>Poorly coordinated operation of interchanges</td>
<td>S1/S2: Information within the investigation of technical issues, quality management tools/strategies, barriers during operation phase</td>
</tr>
</tbody>
</table>
### Implementation barriers

<table>
<thead>
<tr>
<th>Implementation barriers</th>
<th>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of promotion and awareness raising for intermodality</td>
<td>S2: Information about special offers, easy-ticketing services etc.</td>
</tr>
</tbody>
</table>

### Coordination and cooperation

<table>
<thead>
<tr>
<th>Coordination and cooperation</th>
<th>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult multi-stakeholder nature of intermodal interfaces</td>
<td>S2: Coordination and cooperation, contracts between operators/key actors and assessment whether cooperation system has proven itself, barriers</td>
</tr>
<tr>
<td>Poor data-sharing between institutions and with the private sector</td>
<td>S2: Barriers and weaknesses of the service and cooperation between operators/key actors</td>
</tr>
<tr>
<td>Difficulties of fare setting in integrated systems</td>
<td>Indirectly see above</td>
</tr>
<tr>
<td>Difficulties of revenue (and subsidy) sharing in integrated ticketing systems</td>
<td>Indirectly see above</td>
</tr>
<tr>
<td>Difficulties of common management of disruptions</td>
<td>Special budget for troubleshooting to deal with unanticipated barriers</td>
</tr>
<tr>
<td>Detrimental effects of competition on PT</td>
<td>S2: Barriers and weaknesses of the service and cooperation between operators/key actors</td>
</tr>
</tbody>
</table>

#### 3.5 PIRATE – Promoting Interchange Rationale, Accessibility and Transfer Efficiency

PIRATE stands for “Promoting Interchange Rationale, Accessibility and Transfer Efficiency”. The research project was funded by the European Commission under the Transport RTD Programme of the 4th Framework Programme and had a duration from 01/1998 until 06/1999. The projects GUIDE and MIMIC (see above) are sister projects. The PIRATE consortium consisted of four public transport authorities, four research organisations and two SME supplying services to public transport. The main objective of the project lays in

- analysing a sample of European interchanges “to assess the extent and efficiency with which the needs of the various groups of people (users, workers, non-users) involved are actually being met” (PIRATE CONSORTIUM 2001, 4). Therefore the requirements in terms of importance and satisfaction of all groups of stakeholders in public transport interchanges had to be explored. The PIRATE consortium selected 13 European interchange points for the evaluation
based on a list of characteristics. Based on this research another focus of PIRATE lays in

- developing an integrated planning approach for the definition and for providing these needs and therefore to enable a more efficient and successful development of public transport interchanges.

In total 66 interchange characteristics have been defined due to focus groups discussions with four separate “reference groups” (according to PIRATE CONSORTIUM 2001, 11):

- People involved in the planning and construction phase of interchanges with significant voices in terms of physical structure and supply of services.
- People working in interchanges as well as service providers (e.g. bus, tram drivers, cleaners, shop workers, security guards).
- Users of interchanges for travel, shopping, informational or social purposes, categorized by main modes of access walk&ride, park&ride (including kiss&ride), bike&ride and ride&ride (or interchange between public transport modes).
- Non-users respectively potential users, never, or rarely using public transport.

The interchange characteristics - listed in the following Table 3-7 - were grouped into five groups according to aspects determined from earlier research work:

1. Total impression,
2. The interchange and the city,
3. Information,
4. Connecting travel modes and
5. Equipment and services.
Table 3-7: List of characteristics compiled within the PIRATE project (PIRATE CONSORTIUM 2001, 12) and comments on how these key issues are also considered within the KITE project WP5

<table>
<thead>
<tr>
<th>Characteristic of Interchange</th>
<th>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(1) Total impression</strong></td>
<td></td>
</tr>
<tr>
<td>Safety/Security</td>
<td>Traffic</td>
</tr>
<tr>
<td></td>
<td>Personal Safety</td>
</tr>
<tr>
<td></td>
<td>Property security</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Coordination</td>
</tr>
<tr>
<td></td>
<td>S2: Coordination and cooperation, contracts between operators/key actors and assessment whether the cooperation system has proven itself, barriers</td>
</tr>
<tr>
<td></td>
<td>Efficiency</td>
</tr>
<tr>
<td></td>
<td>Operation</td>
</tr>
<tr>
<td>Information</td>
<td>Placement</td>
</tr>
<tr>
<td></td>
<td>S1/S2: Information within the investigation of technical issues</td>
</tr>
<tr>
<td></td>
<td>Legibility</td>
</tr>
<tr>
<td></td>
<td>Relevance</td>
</tr>
<tr>
<td>Comfort</td>
<td>Climate</td>
</tr>
<tr>
<td></td>
<td>S1/S2: Information within the investigation of technical issues</td>
</tr>
<tr>
<td></td>
<td>Cleanliness</td>
</tr>
<tr>
<td></td>
<td>Attractiveness</td>
</tr>
<tr>
<td></td>
<td>Working conditions and organisation</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td>Staff restrooms</td>
</tr>
<tr>
<td>Layout</td>
<td>Accessibility</td>
</tr>
<tr>
<td></td>
<td>S1</td>
</tr>
<tr>
<td><strong>(2) The interchange and the city</strong></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Position and accessibility overall</td>
</tr>
<tr>
<td>Entrance, accessibility</td>
<td>Location of entrances</td>
</tr>
<tr>
<td></td>
<td>S1/S2: Information within the investigation of technical issues, superior networks</td>
</tr>
<tr>
<td><strong>(3) Information</strong></td>
<td></td>
</tr>
<tr>
<td>Travel/Traffic</td>
<td>Travel</td>
</tr>
<tr>
<td></td>
<td>S1/S2: Information within the investigation of technical issues, more detailed</td>
</tr>
<tr>
<td></td>
<td>Traffic</td>
</tr>
<tr>
<td>Time</td>
<td>Clocks</td>
</tr>
<tr>
<td>Characteristic of Interchange</td>
<td>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Orientation</td>
<td>S2: Information within the investigation of technical issues, more detailed</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Connecting travel modes</td>
<td></td>
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<td></td>
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<tr>
<td>Drop-off / Pick up</td>
<td></td>
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<td></td>
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<tr>
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<tr>
<td>Bus / tram stops</td>
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<td></td>
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<tr>
<td>Platforms/stops</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Walk environment</td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristic of Interchange</td>
<td>Comments on consideration within the KITE project (S1-Survey stage 1, S2 – Survey stage 2)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Bike Parking</td>
<td>S2: Information within the investigation of technical issue</td>
</tr>
<tr>
<td>Property Security</td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td></td>
</tr>
<tr>
<td>Distance</td>
<td>S2: Information within the investigation of technical issues (overall network, number and location of boxes)</td>
</tr>
<tr>
<td>Price</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>Shelters</td>
<td></td>
</tr>
<tr>
<td>(5) Equipment and services</td>
<td></td>
</tr>
<tr>
<td>Security Equipment</td>
<td>Surveillance</td>
</tr>
<tr>
<td></td>
<td>S2: Information within the investigation of technical issues (security staff)</td>
</tr>
<tr>
<td>Ticketing</td>
<td>Automatic ticket vending machines</td>
</tr>
<tr>
<td></td>
<td>S2: Information within the investigation of technical issues (location and number of vending machines)</td>
</tr>
<tr>
<td>Commercial services</td>
<td>Shopping</td>
</tr>
<tr>
<td></td>
<td>S2: Information within the investigation of technical issues</td>
</tr>
<tr>
<td></td>
<td>Car/bike rentals</td>
</tr>
<tr>
<td>Waiting Facilities</td>
<td>Waiting rooms</td>
</tr>
<tr>
<td></td>
<td>S2: Information within the investigation of technical issues (number, location, equipment of waiting rooms and areas etc.)</td>
</tr>
<tr>
<td></td>
<td>Toilets</td>
</tr>
<tr>
<td></td>
<td>S2: Information within the investigation of technical issues (location, number of sanitary rooms, especially for handicapped people)</td>
</tr>
<tr>
<td></td>
<td>Catering</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td>Luggage handling</td>
</tr>
<tr>
<td></td>
<td>S2: Information within the investigation of technical issues (within service luggage: number of trolleys etc.)</td>
</tr>
<tr>
<td></td>
<td>Special services</td>
</tr>
<tr>
<td></td>
<td>S2: Information within the investigation of technical issues (Further services)</td>
</tr>
<tr>
<td></td>
<td>Manned services</td>
</tr>
<tr>
<td></td>
<td>S1/S2: Number of information points</td>
</tr>
</tbody>
</table>
During the quantitative phase, a survey was carried out for each selected interchange terminal according to the different “reference groups” mentioned above. Target persons had to rate the interchange characteristics in terms of importance and satisfaction on a scale from 1 to 5 (indicating a maximum). The results show that there are gaps between the importance and satisfaction assessments, in particular toilets perform badly closely followed by security of bikes and property, communications, surveillance, traffic information, cleanliness and clocks. A wide range could be determined of important factors to be considered in designing and operating an interchange successfully. “Users’ needs are diverse and often surprising; non-user needs are different again. Considerable differences exist between the ‘expert’ and the ‘worker’ views of what is important and what is performing well at existing sites. [An useful approach could be developed for the quantification of] these differences, and assessing the importance and performance of the very many relevant characteristics of an interchange” (PIRATE CONSORTIUM 2001, 46). Within the project it was pointed out that the involvement of the public and all stakeholders “in a structured, iterative process (…) not only in the planning phase of any development (…) but also in the build and operating process” (ibid.) is crucial for the interchange’s success and furthermore for achieving an increase of public transport use.

**KITE (WP5):** Within the PIRATE project a detailed list of relevant interchange characteristics has been developed which should be used within KITE WP5 for the assessment of interchanges as GPE and the derivation of services according to the passenger needs as basis for the in-depth survey.
4 Services that support seamless intermodal travelling

According to the literature research, the results of previous work packages as well as of the related projects, different services that support seamless intermodal travelling could be derived and summarized. These services can be assigned to five main fields that also cover all key issues defined in WP1:

1. Intermodal integration of modes,
2. Passenger services to support intermodality,
3. Design aspects of the intermodal interchange,
4. Additional services for passengers’ conveniences and
5. Legal & regulatory framework at intermodal interchanges.

In comparison to aspects 1 to 4, aspect 5 “Legal & regulatory framework at intermodal interchanges” is not defined through services for passengers. In fact it comprises the circumstances and background conditions like legal requirements or laws that promote or constrain the high quality of intermodal passenger travel. The aspects respectively services differ whether they are only development and/or implementation related (e.g. easy way finding - signage) or also operation related issues (e.g intermodal luggage handling). In total more than 20 services that support seamless intermodal travelling were identified. Such a detailed differentiation of services ensures an in-depth analysis of the Good Practice Examples, but it is problematic to find a clear and defined separation between the services within the complex structure of intermodal interchanges: For example the service “Good feeling of safety” can be assigned to both “design aspects of an interchange terminal” and “additional services to passengers’ conveniences”. Treating the topic intermodality it is clear that the aspect “Coordination and cooperation between the various transport operators” is important for the development, implementation and operation of lots of different services. For example, it can be assigned to “short transfer times between long distance modes” amongst others, but is also relevant for “intermodal luggage handling”. Therefore it is useful to treat this aspect into more detail as an own subject within the process evaluation. The following relevant services that support seamless intermodal travelling were determined:
(1) **Intermodal integration of modes**
- Availability of long distance modes and high quality of connections
- Availability of public transport (urban train, underground, bus, tram) for access to and egress from the terminal ("first/last urban mile")
- Integration into the superior road network (e.g. connection to an existing motorway)
- Supply of car parks or parking garages
- Availability of taxis in central position
- Existence of cycle lanes leading to/from or passing the interchange point
- Availability of deposit boxes and stands for bicycles
- Coordination & cooperation (between the various transport operators)

(2) **Passenger services to support intermodality**
- Short transfer times between long distance modes (coordination between transport operators, dynamic schedule synchronization etc.)
- Sufficient information about arrival and departure times and about further connections (integrating all modes)
- Short waiting times at all capacity restraint points (check-in, ticket counter etc.)
- Easy ticketing (ticket vending machines, integrated tickets etc.)
- Intermodal luggage handling

(3) **Design aspects of the intermodal interchanges**
- Short distances for transfer between long distance modes (between gates, platforms etc.)
- Short distances between transport modes and service facilities within the terminal
- Barrier free accessibility and interchange for handicapped persons etc.
- Easy way finding (good and understandable signage)
- Good feeling of safety – design of the terminal
(4) **Additional services for passengers’ conveniences**

- Convenient waiting conditions (e.g. enough seats)
- Good feeling of safety – security services
- Availability of left-luggage offices and lockers
- Good supply of shops and facilities for daily use and consumption
- Availability of information about destination (hotels, sights, events etc.)

(5) **Legal & regulatory framework at intermodal interchange**

- *Not defined through services for passengers (see above).*

It should be pointed out that further organisational related issues as well as institutional and implementation related processes standing and running “behind” that services mentioned above are crucial for the development of high quality services that support seamless intermodal travel. The evaluation of such implementation and operation processes will be part of the in-depth survey (chapter 6).

In chapter 5 results from the first survey with operators of the good practice terminals will be presented. One part of this first interview was to assess the services listed above concerning their importance for seamless intermodal passenger transport from the passenger’s point of view.
5 European Best-Practice Implementation Examples

5.1 Methodological Approach

The selection procedure for the Good Practice Examples (GPE) of European interchanges within the KITE project contained following main steps:

1. Definition of sampling criteria according to previous literature research,
2. Collection of GPE-proposals in cooperation with KITE partners by gathering detailed information of potential GPE (pre-sample),
3. Survey with main operators of pre-selected GPE-interchanges (survey stage 1),
4. Determination of a final sample of GPE-interchanges to be analysed in more detail during an in-depth survey (D14).

First step was the definition of a list of sampling criteria for the intermodal interchange terminals. Criteria for the pre-sampling were set in terms of size and importance of the inter-modal interchanges: The selected terminal should be well known in terms of its convenience for intermodal long-distance travellers and as an example for inter-modality of a high standard. To assure a certain size and importance of the terminal, criteria in terms of the number of modes of transport were set. At least three different modes out of the following should be integrated at the interchange terminal:

- Aircraft, ship, train (international, interurban), bus (international, interurban), train urban, bus urban and all of the following
- Private car, taxi and/or bicycle.

To collect relevant information for the pre-sample of intermodal interchanges of various countries in a second step a questionnaire was sent out to all partners of the KITE consortium. The questionnaire asked for characteristics of services of the potential Good Practice Example that prove intermodality on a high standard considering at least the following fields:

- Passenger transport for access and egress,
- Information,
- Parking spaces,
- Luggage service,
- Waiting Areas,
- Security,
- Service facilities,
- Building and location,
- Planning and operation processes.

According to the criteria defined and the collected information a pre-sample of GPE was developed for the further proceeding of a survey. Main goal of the first stage of the survey (questionnaire see annex) was on the one hand to evaluate the good practice services of the selected interchanges from the operator’s point of view and on the other hand to identify ‘key persons’ who are responsible for the successful development, implementation and operation of these services for an in-depth survey (survey stage two). Target persons in the focus of this first stage was/were:

- The general operator of intermodal interchange terminal,
- Operators of transport modes if different from the above and
- Operators of transport and passenger related services supporting the passengers’ seamless intermodality.

They were asked in combined telephone and mail interviews to

- State major characteristics significant for seamless interchanging from passenger’s point of view (analysed in D13),
- To assess the characteristics of the investigated interchange terminal from the operator’s point of view (analysed in D14),
- To name further ‘key persons’ (and their contact details) responsible for the good (or bad) services offered at the terminal or having knowledge about the decision, implementation, operation and evaluation processes concerning the interchange point (data used for D14).

The obtained list of terminals was adopted in further progress due to the reason that some terminals turned out not to be of quality standard like expected in previous stages.
5.2 Good-Practice Examples of European intermodal interchange terminals

Following Table 5-1 includes the selected GPE of European intermodal interchange terminals as basis for the in-depth-survey.

Table 5-1: List of Good Practice Example (GPE) of intermodal interchanges, type of interchange, country and responsible partner within the KITE project.

<table>
<thead>
<tr>
<th>no</th>
<th>Intermodal Interchange</th>
<th>Type</th>
<th>country</th>
<th>KITE partner (partic.no.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frankfurt Airport</td>
<td>Airport</td>
<td>Germany</td>
<td>UniKarl (2)</td>
</tr>
<tr>
<td>2</td>
<td>Berlin Central Station</td>
<td>Station</td>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Karlsruhe Central Station</td>
<td>Station</td>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Charles de Gaulle Airport, Paris</td>
<td>Airport</td>
<td>France</td>
<td>INRETS (3)</td>
</tr>
<tr>
<td>5</td>
<td>Port de Calais</td>
<td>Port</td>
<td>Switzerland</td>
<td>ETH (4)</td>
</tr>
<tr>
<td>6</td>
<td>Zurich Central Station</td>
<td>Station</td>
<td>Switzerland</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Zurich Airport</td>
<td>Airport</td>
<td>Switzerland</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Vienna International Airport</td>
<td>Airport</td>
<td>Austria</td>
<td>BOKU (5)</td>
</tr>
<tr>
<td>9</td>
<td>Linz Central Station</td>
<td>Station</td>
<td>Austria</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Airport Copenhagen</td>
<td>Airport</td>
<td>Denmark</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Port of Tallin</td>
<td>Port</td>
<td>Estonia</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Stansted</td>
<td>Airport</td>
<td>United Kingdom</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Prague Airport</td>
<td>Airport</td>
<td>Czech Republic</td>
<td>CDV (7)</td>
</tr>
<tr>
<td>14</td>
<td>Brussels Airport</td>
<td>Airport</td>
<td>Belgium</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Antwerpen Central Station</td>
<td>Station</td>
<td>Belgium</td>
<td>IMOB (9)</td>
</tr>
<tr>
<td>16</td>
<td>Liege Guillemines</td>
<td>Station</td>
<td>Belgium</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Brussels Zuid</td>
<td>Station</td>
<td>Belgium</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Lisbon Oriente Station</td>
<td>Station</td>
<td>Portugal</td>
<td>TIS (6)</td>
</tr>
<tr>
<td>19</td>
<td>Madrid Barajas</td>
<td>Airport</td>
<td>Spain</td>
<td></td>
</tr>
</tbody>
</table>

In total 19 interchange terminals (9 airports, 8 stations, 2 ports) from 11 different countries were selected for the first survey (chapter 5.3), as potential examples for the Catalogue (chapter 5.6) and for the in-depth analysis (D14).
5.3 Assessment of services from the passengers point of view – first part of the results of the survey

The operators or managers of the 19 selected interchange terminals in Europe were contacted in order to conduct the survey stage 1 with them. Among others, within this first survey the contact persons should assess the defined services (see chapter 4) at inter-modal interchanges for long distance travel including the “last/first mile” according to their importance from the passenger’s point of view (questionnaire see annex). This work step was accomplished in order to determine if the services identified in chapter 4 are estimated as important also from the experts interviewed or if even additional services can be added to the list. The services, features, facilities had to be rated from 1 to 5 (1=most important, 5 = not important), whereby each rating had to be used 5 times at most. Further ideas of important services for seamless interchange and conveniences were collected to feed back and complete the list complete the list if necessary.

Following Table 5-2 contains an overview of the results of the assessment. Thereby the average values of the operators’ assessments of services were grouped by railway stations, airports and ports (detailed table see annex). The afterwards following figures (Figure 5-1 to Figure 5-20) belonging to Table 5-2 show the results for each service surveyed into more detail. Since not all persons of the selected terminals who were contacted answered this first questionnaire, the number of interchanges in the tables is smaller than 19.
Table 5-2: Average assessment (by operators of stations, airports and ports from the passengers point of view) of defined services at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important), whereby each rating could not be used more than 5 times (values rounded up).

<table>
<thead>
<tr>
<th>Service</th>
<th>Average value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermodal integration of modes (Development, implementation, operation)</td>
<td></td>
</tr>
<tr>
<td>Availability of long distance modes and high quality of connections</td>
<td>2 2 1 2</td>
</tr>
<tr>
<td>Availability of public transport for access to and egress from the terminal (&quot;first/last urban mile&quot;)</td>
<td>2 2 2 3</td>
</tr>
<tr>
<td>Integration into the superior road network (e.g. connection to motorway)</td>
<td>3 3 3 2</td>
</tr>
<tr>
<td>Supply of car parks or parking garages</td>
<td>2 2 3 3</td>
</tr>
<tr>
<td>Availability of taxis in central position</td>
<td>2 3 2 3</td>
</tr>
<tr>
<td>Existence of cycle lanes leading to/from or passing the interchange point</td>
<td>4 3 5 5</td>
</tr>
<tr>
<td>Availability of deposit boxes and stands for bicycles</td>
<td>3 2 5 4</td>
</tr>
<tr>
<td>Passenger services to support intermodality (Development, implementation, operation)</td>
<td></td>
</tr>
<tr>
<td>Short transfer times between long distance modes (coordination between transport operators, dynamic schedule synchronization etc.)</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td>Sufficient information about arrival and departure times and about further connections (integrating all modes)</td>
<td>2 1 2 4</td>
</tr>
<tr>
<td>Short waiting times at capacity restraint points (e.g. check-in, ticket counter)</td>
<td>2 2 2 1</td>
</tr>
<tr>
<td>Easy ticketing (ticket vending machines, integrated tickets etc.)</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td>Intermodal luggage handling</td>
<td>3 4 3 5</td>
</tr>
<tr>
<td>Design aspects of the intermodal interchange (Development, implementation)</td>
<td></td>
</tr>
<tr>
<td>Short distances for transfer between long distance modes (between gates, platforms etc.)</td>
<td>3 3 3 3</td>
</tr>
<tr>
<td>Short distances between transport modes and service facilities within terminal</td>
<td>2 2 2 3</td>
</tr>
<tr>
<td>Barrier free accessibility and interchange for handicapped persons etc.</td>
<td>3 2 3 5</td>
</tr>
<tr>
<td>Easy way finding (good and understandable signage)</td>
<td>2 1 1 3</td>
</tr>
<tr>
<td>Good feeling of safety – design of the terminal and security services*)</td>
<td>2 1 2 3</td>
</tr>
<tr>
<td>Additional services for passengers’ conveniences (Implementation, operation)</td>
<td></td>
</tr>
<tr>
<td>Convenient waiting conditions (e.g. enough seats)</td>
<td>3 3 3 3</td>
</tr>
<tr>
<td>Availability of left-luggage offices and lockers</td>
<td>3 2 3 5</td>
</tr>
<tr>
<td>Good supply of shops and facilities for daily use and consumption</td>
<td>3 2 3 3</td>
</tr>
<tr>
<td>Availability of information about destination (e.g. hotels, sights, events)</td>
<td>4 4 4 4</td>
</tr>
</tbody>
</table>

*) The service “Good feeling of safety” could be assigned to “Design aspects of the terminal” as well as to “Additional services for passengers’ conveniences”, within the survey both were summarised to one aspect (Good feeling of safety – design of the terminal and security services). Coordination & cooperation (between the various transport operators) was not included in the survey, because this aspect is not assessable from the passengers point of view. It should be noted that within one interview (station Berlin) the assessment modalities were not considered (ranks 1 till 5 should be used 5 times at most). This is also relevant for following figures.

railway stations
airports
ports
Figure 5-1: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Availability of long distance modes and high quality of connections” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-2: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Integration into the superior road network” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-3: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Supply of car parks or parking garages” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-4: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Availability of taxis in central position” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-5: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Existence of cycle lanes leading to/from or passing the interchange point” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-6: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Availability of deposit boxes and stands for bicycles” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-7: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service "Short transfer times between long distance modes" at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-8: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service "Sufficient information about arrival and departure times and about further connections" at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-9: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Short waiting times at all capacity restraint points” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-10: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Easy ticketing (ticket vending machines, integrated tickets etc.)” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-11: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Intermodal luggage handling” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-12: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Short distances for transfer between long distance modes (between gates, platforms etc.)” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-13: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Short distances between transport modes and service facilities within the terminal” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-14: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Barrier free accessibility and interchange for handicapped persons” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-15: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Easy way finding (good and understandable signage)” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-16: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Good feeling of safety (design of the terminal and security services)” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-17: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Convenient waiting conditions” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-18: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Availability of left-luggage offices and lockers” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Figure 5-19: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Good supply of shops and facilities for daily use and consumption” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)

Figure 5-20: Assessment (by operators of stations, airports and ports from the passengers point of view) of the defined service “Availability of information about destination (hotels, events etc.)” at intermodal interchanges for long distance travel from 1 to 5 (1=most important, 5 = not important)
Although the sample per type of interchange terminal (7 railway stations, 6 airports, 2 ports\textsuperscript{1}) is small, some tendencies can be derived from the results of the survey: The results show that there are services that got quite uniform assessments independent from the type of interchange terminal (railway station, airport, port). For example, the services and facilities “Easy way finding”, “Short transfer times between long distance modes” and “Easy ticketing” had rather higher ranks of importance for seamless passenger travel from the passengers’ point of view. Also the services “Sufficient information about arrival and departure times”, “Good feeling of safety” and “Short distances between transport modes and service facilities” were assessed as important by the most interviewees. Instead, the “Existence of cycle lanes leading from/to the interchange terminal” and “Information about the destination” had rather less ranks of importance. Most interchanges considered the facility “Convenient waiting conditions” as not very important for passengers (mostly rank 3). Only at the railway stations in Antwerp and Berlin as well as at the airport in Brussels the operators believe that this characteristic of an interchange terminal is very important for supporting intermodal passenger transport.

There are further services that got quite uniform assessments within the groups of interchange type but differ between the three groups of interchange type. For example due to the operators’ assessments it could be expected that the “Integration of cycle lanes” as well as the “Existence of deposit boxes for bicycles” seem to be more important for passengers at railway stations in comparison to airports. The service “Availability of long-distance modes and high quality of connections” was assessed to be very important from all of the airports’ operators interviewed. For operators of railway station this finding could not be derived because there not only long-distance modes but especially regional and short-distance connections play a decisive role. “Availability of left luggage offices and lockers” is assessed very differently at airports (rank 1 till 5), whereas at railway stations this service is ranked as important to very important (rank 1 and 2). Instead, the service “Intermodal luggage handling” has more relevance at airports than at railway stations. Because at ports most passengers arrive and depart with their own cars these two facilities are unimportant at this type of interchanges.

Furthermore, the evaluation of the service “Barrier free accessibility and interchange for handicapped persons” turned out differently at the variable types of interchanges.

\textsuperscript{1} *) date 2008/03/31
as well. At railway station this characteristic is assessed as very important. Instead, at ports and airports only the ranks 3 to 5 are allocated to this facility.

Interesting is also the assessment of the characteristic “Integration in the superior road-network” and the “supply of car parks” by the terminal operators from the passengers’ point of view. At two airports the superior road network was assessed as not important at all, whereas all the other terminals of this type as well as ports allocated higher ranks to this service. Also at railway stations the evaluation varied: The interchanges in Berlin and Liege – at the latter there the interchange is located more outside the city centre – gave higher ranks to this service. The other railway stations estimated the superior road network as mid or not important (rank 3 and 4). In contrast, the supply of parks was assessed as relevant (rank 1 and 2) at all railway stations investigated which figures out that a high quality local road network opening up the surrounding area is at least (and even more) as important as a high number of connections to the superior network. According to the estimations the provision of parking spaces at airports seems not as relevant as at the railway stations where the presence of commuters plays an important role.

Further services named by the operators themselves were for example “Regularly schedule and help for passengers that missed a connection” (assessed with 4), “Info points” (assessed with 2) which both could be assigned to “Sufficient information about arrival and departure times and about further connections”.

It should be pointed out that each rating could be used not more than 5 times by the interviewees. This should not lead to the conclusion that single services are not important, but furthermore less important in comparison to other ones. It should also be considered that the average values were rounded.
5.4 Structure of the Catalogue of Best-Practice Implementation Examples

Based on the returned questionnaires of survey stage 1 and on further research data, description sheets for each intermodal interchange terminal were developed as major components of the Catalogue of Best-Practice Implementation Examples. Besides technical and general information like the number of passengers, developed area and number of operators (Table 5-3), these data sheets provide a description about services of good practice with the focus on intermodal long-distance journeys. They further contain a picture of the interchange terminal, historical background, information about the structural arrangement, intermodality and conveniences for passengers provided. Ideally, all of the following topics should be covered within the Catalogue of Best-Practice Implementation Examples:

**General Information**

- Location,
- Historical background and building history,
- Year of construction,
- Architect,
- Operator,
- Investor.

**Structural characteristics**

- Arrangement of all modes,
- Transfer times (distances),
- Arrangement of shops, gastronomy, toilets,
- Barrier free,
- Weather protection of ways and waiting areas,
- Points of conflict for crossing passengers.
Intermodality

- Accessibility of terminal,
- Accessibility of modes,
- Interchanging from one service to each other,
- Information about further connections,
- Quality of intermodality expressed in waiting time,
- Adjustment of connections,
- Intermodal tickets or luggage services.

Convenience for Passengers

- Waiting conditions, e.g. facilities that make waiting time more enjoyable,
- Facilities for daily use and consumption,
- Luggage handling at the terminal,
- Support of elderly and impaired people,
- Safety,
- Cleanness,
- Easy ticketing.

Information

- Signage – easy way finding,
- Information desks,
- Information about destination (hotels, events),
- Means of information provision (staff, information screens etc.),
- Further information like arrangement of trains, special support for handicapped people.
In terms of main figures and facts following information were collected:

Table 5-3: General main figures and facts of railway stations, airports and ports collected for the Catalogue of Best-Practice Implementation Examples

<table>
<thead>
<tr>
<th>railway station</th>
<th>airport</th>
<th>port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of platforms (for regional and long-distance passenger transport)</td>
<td>Take-offs and landings per year (departures and arrivals)</td>
<td>Passenger ships per year (arriving and departing vessels)</td>
</tr>
<tr>
<td>Number of long-distance train operators</td>
<td>Number of runways (number of runways situated on the airport area)</td>
<td>Number of piers for passenger transport</td>
</tr>
<tr>
<td>Number of regional train operators</td>
<td>Number of airlines (airlines operating on this airport for passenger transport)</td>
<td>Number of passenger shipping companies (operators serving this port on long-distance trips)</td>
</tr>
<tr>
<td>Developed area in m² (intermodal passenger transport related to built surface area in m²; comprises runways, terminals, platforms, gates, car parks, etc.)</td>
<td>Passengers per year (passengers arriving and departing on long-distance trips)</td>
<td>Long-distance (passenger) trains per year (number of departures and arrivals)</td>
</tr>
<tr>
<td></td>
<td>Regional (passenger) trains per year (number of departures and arrivals)</td>
<td>Long-distance buses per year (number of departures and arrivals)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regional buses per year (number of departures and arrivals)</td>
</tr>
<tr>
<td></td>
<td>Number of local public transport lines (public transport lines for the last urban mile operating at the terminal, e.g. trams, subways and urban buses)</td>
<td>Number of parking spaces (number of parking spaces situated on the interchange area including short- and long-time parking spaces as well as outdoor and indoor parking spaces)</td>
</tr>
<tr>
<td></td>
<td>Number of direct road exits (exits from high-grade road network like motorway or expressway)</td>
<td></td>
</tr>
</tbody>
</table>

5.5 Knowledge Base

The collected information of Good Practice Examples is uploaded on the KITE-wiki-database. These data sheets of the intermodal interchange terminals have to be seen as dynamic documents and will be updated during the progress of the survey by the KITE partners as well as by the operators themselves. Following Figure 5-21 shows an example of the online presentation of a Good Practice Example.
Figure 5-21: Example of GPE in the on-line knowledge base (KITE wiki)

The article can be updated easily by all users of the database by choosing the buttons "edit".

5.6 Catalogue of Best-Practice Implementation Examples

The following pages contain the description of the selected Good Practice Examples of intermodal interchanges, except the Port of Kiel (first stage of evaluation not completed yet – state: 2008/03/31).
FRANKFURT AIRPORT

Frankfurt Airport
Im Tauberrgrund 27
65451 Frankfurt am Main
Germany

Technical features
Available modes: Aircraft, international train, interurban train, urban train, international bus, interurban bus, urban bus, taxi, private car
Location: 12 km south-west of Frankfurt centre
Developed area: 19.4 km²
Passengers per year: 52.8 Mio (2006)
Take-offs and landings per year: 490 000 (2006)
Number of runways: 3
Number of airlines: 155
Long-distance trains per year: approx. 60 000 (175 per working day)
Regional Trains per year: approx. 79 000 (218 per day)
Long-distance buses per year: approx. 20 000 (57 per working day)
Regional buses per year: approx. 95 000 (264 per work-day)
Number of local public transport lines: 30
Number of parking spaces: 14 700
Number of direct road exits: 3

General Information
Frankfurt Airport is located 12 kilometres from the city centre of the German city of Frankfurt am Main. It is the largest airport of the country and the third largest in Europe, serving as an important hub for international flights from all around the world. The enterprise “Fraport” is the operator of the airport. The southern side of the complex, Rhein-Main Air Base, was a major airlift base for the United States from 1947 until late 2005.

Frankfurt is used as a hub of the German national carrier Lufthansa. Because of capacity limits in Frankfurt, Lufthansa divides its air traffic between Frankfurt and Munich’s Franz Josef Strauss International Airport when possible.

Airplanes starting from Frankfurt currently approach 265 destinations non-stop. These are more than destinations of London Heathrow Airport, but in terms of passenger traffic Frankfurt is third in Europe, behind Heathrow and Paris Charles de Gaulle Airport. Nevertheless, there are plans to expand the Frankfurt Airport with a fourth runway and a new Terminal 3. Modifications have already started in order to make the airport compatible to the Airbus A380. At the moment about 68 500 people work at the airport and so it is the biggest local concentrated employer in Germany.
Structural Arrangement

The airport has three terminals in total. The main two terminals for passenger operations are situated within a distance of one kilometre. They are linked by the elevated railway “SkyLine” and by a shuttle bus. On Terminal 3 mainly first class services are processed. Terminal 2, which opened in 1994, is the newest terminal and was designed by the English architect Sir Norman Foster. In front of Terminal 1 two train stations are situated - one for regional trains (“Regionalbahnhof”) and the other for interurban and international trains (“Fernbahnhof”). Passengers, who arrive at the international railway station and want to reach Terminal 2, have always to cover a long distance – a situation which is criticised very often.

On level one of Terminal 1 the arrival zone is located. Level three and four include the departure zone with all general facilities and services. Terminal 2 is arranged differently. Both, level two and level three include arrival and departure facilities. On the upper level the station of the “SkyLine” is situated and on the lower level the shuttle bus can be entered or left. Roads lead to the levels one and two at Terminal 1 and to level two at Terminal 2.

All terminal buildings are accessible barrier-free and all levels can be reached by elevators and escalators.

Intermodality

Frankfurt Airport is well connected with a double railway station and is directly located at one of the most important intersections of motorways in Germany (A3 and A5). Furthermore, a bus station is integrated at the airport.

The station for regional trains “Regionalbahnhof” at Frankfurt Airport opened in 1972 together with the Terminal 1 and is located underground in front of the terminal, two levels below the arrival level. Most of the time, urban railway trains depart every 15 minutes eastwards to Frankfurt Central Station (journey time 11 minutes), to the four stations in the central Citytunnel and further to the east of Frankfurt. The first urban railway train arrives at 4:28 h from Frankfurt and Hanau and at 4:29 h from Mainz/ Wiesbaden. The last one departs at 1:32 h to Frankfurt, at 0:29 h to Wiesbaden and at 0:59 h to Rüsselsheim. The ticket to Frankfurt costs 3.55 Euro and has to be purchased before going down to the platform, either at vending machines or at the German Train ticket counter. In the night, when the long distance station is closed, regional express trains to destinations like Saarbrücken in the west, Koblenz down the Rhine valley, or Würzburg in the east as well as some long distance trains stop at the “Regionalbahnhof”.

The station for long-distance trains “Fernbahnhof” at Frankfurt Airport opened in 1999 and is the last station of the new Cologne-Frankfurt high-speed rail line (ICE). This railway connection links the Ruhrgebiet with southern Germany, allowing speeds up to 300 km/h. All ICE trains between Cologne and southern Germany stop at the Airport train station, taking little less than an hour from Cologne to the Airport. About 10 trains per hour depart in all directions. At the long-distance railway station trains arrive and depart from platforms 4 to 7. When arriving there, passengers can drop off their flight luggage immediately at the “Luggage check-in at the AiRail Terminal”, a service which is not offered by all airlines. The “AiRail Terminal” is an extension of the long-distance railway station and is expected to open in 2008/2009.

Both railway stations are linked to Terminal 2 via buses and the “SkyLine”.

Deutsche Bahn, the German railway company, operates the “AiRail” Service in cooperation
with Lufthansa, American Airlines and Emirates. The service is offered for the stations of Bonn, Cologne, Duesseldorf, Freiburg, Kassel-Wilhelmshoehe, Karlsruhe, Leipzig, Hamburg, Hanover, Mannheim, Munich, Nuremberg and Stuttgart.

Various transport companies provide bus services to the airport. Stations of the coaches are located in front of the arrival hall of Terminal 1 and on the second level of Terminal 1 in front of the arrival and departure halls. The buses arrive from and depart to Darmstadt, Sprendlingen, Kelsterbach, Walldorf and Ruesselsheim.

For passengers coming with their own car multi-storey car parks, mostly underground, are situated at the terminals. A long term parking lot is located south of the runways on the area of the former US military installation. From there a shuttle bus service to the terminals is provided.

A large number of taxis are available around the clock at both terminals. Depending on traffic conditions a trip to/from the centre of Frankfurt costs about 20 euros and takes 20 to 30 minutes. When travelling to Frankfurt Airport by taxi it is easy to find the right terminal. The taxi drivers know the terminals according to the operating airlines, hence they will "automatically" take passengers to the right terminal and put them down near the check-in desk.

All major car rental companies are present at Frankfurt Airport.

Convenience for Passengers

When arriving by long-distance trains at the according train station it is possible to do the check-in for some major airlines at the station. Hence, passengers don't have to carry their luggage to the terminal (Terminal 2 is quite far away). For the long walking distances between the train/coach stations and the terminals conveyor bands are provided, enhancing the comfort for passengers.

The waiting conditions at the terminal are sufficient, but at the interurban and regional train stations the number of seats is scarce.

Passengers with reduced mobility may use special services. For example, they can use the parking areas in front of the terminal buildings for free in order to get in and out of the car and to load or unload luggage. Special permanent parking areas for persons with disabilities are available in the parking garages for standard fares. For leaving or getting to the platforms of the train stations, German Rail offers service to support people with restrained mobility. It is recommended to order these services in advance in order to organize all necessary facilities. From the counter to the aircraft as well as from the aircraft to the luggage claim the airlines are obliged for assistance. This service can be ordered at the service counter in the departure hall or by phone in advance. Furthermore, all doors at the terminal open automatically and are wide enough for a wheelchair to fit through. The toilets on all levels in the terminals are suited for persons with disabilities.

Information

The airport is equipped with several information centres. One is situated at Terminal 2 and three are positioned throughout Terminal 1. At all these information centres travel relevant information can be obtained.

It is possible to look up the departure times, arrival times and delays of all airplanes landing
or going from Frankfurt Airport in the Internet. At the terminal real-time information on arrival and departure times of trains and airplanes is provided. Information on trains is indicated at the platforms of the train stations and that on airplanes is indicated on screens of various sizes, which are positioned on neuralgic points at the airport.

Outstanding best practice characteristics for long distance intermodality

- Ground accessibility
- Availability of long distance modes and high quality of connections
- It is possible to hand over flight luggage already at the check-in at the “AirRail” Terminal (at some German railway stations, not offered by all airlines)
- Passengers with reduced mobility may use special offers

Outstanding best practice for implementation

- Integration into the superior road network (e.g. connection to a motorway existing)
- Availability of taxis in central position

Characteristics of weakness

- Two train stations instead of one – confusing
- It’s difficult for passengers to orientate inside the terminal
- Waiting conditions as the interurban and regional train stations are not sufficient, seats are missing

Contact

Fraport AG
Main Operator
Frankfurt Airport Service Worldwide
60547 Frankfurt am Main
Tel. +49 69690-0
email:
web: www.fraport.de
BERLIN CENTRAL STATION

DB Station & Service AG
Heidestraße 3
10557 Berlin
Germany

Technical features

Available modes: international train, interurban train, urban train, urban bus, taxi, private car, bicycle, pedestrian

Location: Centre of Berlin

Developed area: 26 ha

Passengers per year: approx. 100 million (300 000 passengers and visitors per day)

Long-distance trains per year: approx. 80 000 (225 per work-day)

Regional trains per year: approx. 110 000 (325 per work-day)

Number of platforms: 14

Number of long-distance train operators: 2

Number of regional train operators: 3

Long-distance buses per year: 0

Regional buses per year: approx. 250 000 (736 per work-day)

Number of local public transport lines: 21

Number of parking spaces: 900

Number of direct road exits: 1

General Information

The Central Station of Berlin was designed by the architect Meinhard von Gerkan and was opened on the 26th May 2006. The station is located on the site of the historic Lehrter Bahnhof (Lehrte Station) and Lehrter Stadtbahnhof.

Lehrter Bahnhof opened in 1871 as the terminus of the railway line, which linked Berlin with Lehrte, a city near Hanover. Later, this line became Germany's most important east-west connection. In 1884, when the nearby located station “Hamburger Bahnhof” in Berlin was closed, Lehrter Station became the terminus for all trains to or from Hamburg.

In 1882 the urban railway (S-Bahn) of Berlin was completed and therefore a smaller interchange station called “Lehrter Stadtbahnhof” was opened in the north of the old Lehrte Station. This new station also became part of the Berlin urban railway.

After German reunification it was decided to improve Berlin's railway network by constructing a new north-south main line and to supplement the east-west connections of the urban railway. Lehrter Stadtbahnhof was considered to be the logical location for a new central station of Berlin.
The new Berlin Central Station now is Europe's largest two-level railway station. The station is operated by DB Station & Service, a subsidiary of DB AG.

### Structural Arrangement

Berlin Central Station is of very unique architecture and structure. On the upper (+2) and lower (-2) level, interurban and international trains are operating. The tracks of the current urban railway lines stop at the upper level, too. It is planned to construct two more tracks for the underground on level -2. The terminal contains a huge shopping centre, which offers stores and gastronomy on levels -1 up to level +1. On these three levels, services like DB Travel Agency, a luggage centre, DB VIP lounge and a customer care centre are located as well. A parking garage is situated on level -1 and -2. All platforms and the parking garages are accessible barrier-free.

The arrangement of the platforms and the facilities lead to a very compact structure of the terminal. As a result, ways for changing between modes are rather vertical and therefore short. Upon the station two business towers were constructed, providing space for offices of various companies and probably the main quarters of DB.

### Intermodality

International, interurban and urban trains going to or coming from Berlin stop at Central Station of the city. Every day 225 long distance trains, 325 urban trains and 627 urban commuter trains stop at the station.

Apart from the urban railway trains, which link the western and eastern parts of Berlin, a south-north track is planned to be constructed and will be inaugurated in 2012. For the Berlin underground, a station at Berlin Central Station was already built. Curiously, the tracks leading to and from the station have not been built yet. It is planned to link the station in 2020 to the existing line U5. In the meanwhile the tracks leading to Brandenburger Tor shall be installed and named U55.

Furthermore, it is planned to link the station to the local tramway network. Concrete plans exist, which schedule to lead the lines M6, M8 and M10 to the Central Station. Construction work should start in 2009.

Currently it is possible to reach Berlin Central Station by Metrobus and other bus lines like M41, M85, TXL, 120, 123, 147, 240, 245, N20 and N40.

The car park, providing 860 parking spaces, is situated on level -2 and -1. It is integrated into the terminal building very well because the platforms can be reached directly from there. Easy access is also provided to the lower floor of the shopping centre. The garage is protected by frequent patrols and video surveillance.

For passengers who arrive at Berlin Central Station and would like to head on by bike a “call a bike” service is provided. With this service it is easy to use a bike to explore the city.

### Conveniences for Passengers

More than 800 employees are responsible for service, security and cleanliness of the terminal and aspire to satisfy customer needs. Staff is recruited from various disciplines like technique, management and service.
Whenever passengers need assistance they can ask the staff for help at any help desk. It is recommended to book this assistance in advance via internet or telephone as long as it is predictable. Trolleys are available on each platform. People who need support with their luggage may ask for a porter service. Furthermore, automatic doors are installed and a handicapped accessible bathroom is located at the ground floor.

For safety reasons it is not possible to use plain lockers for luggage storage. Instead of the lockers, a luggage centre is provided where luggage can be stored for 4 euro per day. Every single item has to pass through the security check.

Throughout the whole terminal area, internet access is provided via WLAN. Four different providers may be chosen.

Together with the police, the DB security runs a security office at the station in order to assure passenger safety.

The new Central Station is also an important property for business. On three levels (15,000m²) 80 stores of different branches are located. These shops are opened daily from 8.00 a.m. to 22.00 p.m. The pharmacy is open all around the clock. The DB provides two travel agencies, lounges and an office for car sharing.

Information

The service point, which is run by the terminal management, provides any kind of information passengers may need when travelling by train. This information may be timetables for interurban, international and urban trains, public transport, delays and breakdowns. Furthermore, information about the city like hotel reservation and taxi order can be obtained.

For people with special needs information about possible support can be obtained at the information points, too. The accesses to the platforms are indicated in Braille in order to give signage to blind passengers.

Departure times, arrival times and delays are indicated on numerous info panels and screens, which are distributed around the terminal and in various sizes. This information is also available via internet or telephone. Passengers owning a WAP-mobile or an i-mode are able to use this information service even on their trip. With these systems, reservations can be done up to ten minutes before departure. The charges costs are 3 euro for each direction, the same as at the counters.

Outstanding best practice characteristics for long distance intermodality

- Short transfer times between long distance modes (coordination between transport operators, dynamic schedule synchronization etc.)
- Availability of many diverse long distance modes and high quality of connections
- Short distances between transport modes and service facilities within the terminal
- Departure/arrival times and delays are available also on the Internet, passengers with WAP-mobile are able to use the information even on the trip, also reservations can be done with WAP-mobile up to ten minutes before departure
- The service “call a bike” is provided at the Berlin Central Station
Outstanding best practice for implementation

- Feeling of safety – security services and design of the terminal
- Supply of shops, restaurants and facilities for daily use and consumption with extended opening hours (Mon-Sun 8.00 a.m. until 10.00 p.m.)
- Barrier free accessibility and interchange for handicapped persons etc.

Characteristics of weakness

- Deposit boxes and stands for bicycles are not available
- Long waiting times at all capacity restraint points (check-in, ticket counter etc.)
- Not enough left-luggage offices and lockers available
- The station for the Berlin underground was built already, but the tracks still have to be constructed, therefore the station is not available via underground until now (in 2020 the railway station shall be connected with underground line U5)

Contact

Deutsche Bahn AG
Main Operator
Potsdamer Platz 2
10785 Berlin
web: www.bahn.de
KARLSRUHE CENTRAL STATION

Bahnhofsplatz 1a
76137 Karlsruhe
Germany

Technical features

Available modes: International train, interurban train, urban train, international bus, interurban bus, urban bus, tramway, taxi, private car, bicycle
Location: Centre of Karlsruhe
Developed area: 49 ha
Passengers per year: 5.3 Mio.
Long-distance trains per year: approx. 50 000 (140 per day)
Regional trains per year: approx. 80 000 (235 per work-day)
Number of platforms: 8
Number of long-distance train operators: 3 (total for long and short distance)
Number of regional train operators: 3 (total for long and short distance)
Long-distance buses per year: 10 000 (approx. 30 per work-day)
Regional buses per year: approx. 120 000 (352 per work-day)
Number of local public transport lines: 17
Number of parking spaces: 860
Number of direct road exits: 1

General Information

The Central Station of Karlsruhe is a hub connecting several railway lines with each other and therefore the station is classified as one of the major Category 1 stations in Germany. The 20 stations of this Category 1 are considered equal to international airports in terms of service (permanently staffed), railway-related facilities and shopping facilities. The station opened in 1843 and was situated about 500 metres south of the Karlsruhe market square. It was built together with the railway line, which connected Mannheim and Basel. The station was then extended with lines to Maxau, Pforzheim, Heilbronn and Leopoldshafen. As the lines were all on street level and traffic increased over the years, the old station was no longer manageable. A new station was therefore constructed approximately one kilometre south of the old station and opened in October 1913. In World War II the station was damaged just a bit and could be modernised completely in the early 1990s when the Karlsruhe model tram-train system was implemented. Today, about 150 long-distance passenger trains per day stop at the station.
The owners of the infrastructure are German Rail (DB) and DB Station & Service respectively, which are responsible for the operation as well.

**Structural Arrangement**
Karlsruhe Central Station is a one level station. The building can be entered from a square on which a tramway station, a taxi stand and a bus station are situated. Inside the building many restaurants, shops and service facilities can be found. Outside the building various parking facilities for bicycles are situated, which provide secured and roofed parking space. Around the terminal, mainly in the south, several parking spaces and garages are available. The Central Station is accessible from the south and from the north. In order to provide short walking distances for passengers, two passageways below the tracks link the parking facilities with the terminal building. These passages also link all platforms, which can be accessed by stairs, elevator and escalator. Altogether there are eight platforms, of which four are equipped with waiting areas.

**Intermodality**
In front of the terminal, next to the main entrance, services for interchanges are situated. For example, the stops of the tramway and local buses of the Karlsruher Verkehrsverbund (public transport network) are situated there, which offer access to the city and the surrounding area. Some lines of the suburban railway stop directly in the central station. They use the same tracks like the long distance trains and therefore the walking distance for interchanging turns out to be very short.

Passengers who arrive with their private car have the possibility to use one of the 860 parking spaces at different garages situated around the building. The station can be approached from several directions due to its central position. Distances from the garages to the platforms and to the arriving hall are short. The garages are public and special fares are offered for passengers continuing their journey by train. It is opened around the clock and secured by guards and CCTV.

Passenger preferring to continue their journey from Karlsruhe Central Station by rental car may use the DB Car sharing service. Cars need to be booked in advance up to some hours before. The renting process is kept easy and customer-friendly.

In front of the main entrance of the building a taxi stand is situated.

The Central Station of Karlsruhe offers good services for cyclists. More than 1.500 parking spaces are provided and most of them are roofed and secured.

**Conveniences for Passengers**
The train station is managed by a 3S-Centre responsible for all concerns in terms of security, cleanliness and service. In a kind of control centre, information is gathered. Reports via telephone or radio are collected and adequate arrangements are prompted. The centre is coordinated with the security centre in Berlin. The Federal Police and security staff of the German Rail are present around the clock – both on patrol as well as in the police office.

Luggage handling at the station is easy due to the provided luggage trolleys and helpful service staff. At the station luggage lockers are available. On the way to the platforms a very unique support is provided. Conveyer belts for luggage right next to the escalators make the
transport of luggage onto the platforms easy and convenient. Passengers needing help with their luggage or being physically impaired have the possibility to ask for assistance in advance by internet or telephone. Especially for blind people a guidance system through the terminal in Braille is provided. Also adequate toilets for handicapped people are offered.

At the arrival hall various shops and gastronomy are situated. The shopping centre is accessible conveniently by public transport due to its central location. All necessary travel equipment as well as items for daily use like food, books or flowers can be purchased. Furthermore, a travel agency, a communication centre, a bank and first aid is located there.

Information
The DB service point is the central contact point for more than 90 train stations all over Germany. All questions about travelling by train will be answered there. Also information about timetables, special services for handicapped people and information about sightseeing can be obtained. Questions at the platforms will be answered by the staff members, which are noticeable by their red caps.

Real-time information is provided for interurban/international trains as well as for urban trains and tramways on large screens at the arriving hall and at various places around the terminal. The tramways’ departure times are not indicated inside the terminal building, but outside at the platform.

Departure and arriving times can be checked in the Internet. Information about construction, delays and replacement transportation services can be obtained there as well. Passengers owning a WAP-mobile or an i-mode can use travel information even on their trips. Also pre-reservations are possible via WAP-mobile. Costs are the same as when booking at the counter and will be accepted until ten minutes before departure.

Outstanding best practice characteristics for long distance intermodality
• Good feeling of safety – security services and design of the terminal
• Sufficient information about arrival and departure times and further connections (integrating all modes)
• Departure/arrival times and delays are available also on the Internet, passengers with WAP-mobile are able to use the information even on the trip, also reservations can be done with WAP-mobile up to ten minutes before departure

Outstanding best practice for implementation
• Availability of deposit boxes as well as secured and roofed stands for bicycles
• Availability of taxis at a central position
• For visually impaired persons a guidance system in Braille is provided through the terminal
Characteristics of weakness

- Cleanliness not sufficient – garbage lying around in some areas
- Missing information for passengers in case of disturbances in the service

Contact
Deutsche Bahn AG
Main Operator
Potsdamer Platz 2
10785 Berlin
web: www.bahn.de
CHARLES DE GAULLE
AIRPORT

BP 20101
95711 Roissy Cedex
France

Technical features

Available modes: Aircraft, international train, interurban train, urban train, urban bus, taxi and private car
Location: 26 km north-east from Paris
Developed area: 3 500 ha
Passengers per year: 59 922 177 (2007)
Take-offs and landings per year: 543 810 (2007)
Number of runways: 4
Number of airlines: N/A
Long-distance trains per year: N/A
Regional Trains per year: N/A
Long-distance buses per year: N/A
Regional buses per year: N/A
Number of local public transport lines: approx. 3
Number of parking spaces: N/A
Number of direct road exits: 1 (A1)

General Information

Charles de Gaulle Airport (CDG), which is located north-east of Paris, is the biggest airport of France and the second biggest airport of Europe (after London Heathrow). In 2007 59.9 Million passengers came to the airport, which is used by Air France as a major hub. With over 600 involved enterprises and 55,000 employees it turns out to be an important business location.

The planning and construction phase of what was known as Aéroport de Paris Nord (Paris North Airport) began in 1966. On March 8th in 1974 the airport opened it doors, renamed Charles de Gaulle International Airport. Terminal 1 was constructed in a vanguard design, consisting of a ten-floor high circular building surrounded by seven satellite buildings, each with four gates. The main architect was Paul Andreu, who was also in charge of the extensions during the following decades.

Structural Arrangement

Charles de Gaulle International Airport has three terminals. Terminal 1 is the oldest one. Terminal 2 was built for Air France, but hosts other airlines now as well. The third Terminal
(T3, formerly T9) hosts charter and low cost airlines, such as easyJet.

Terminal 2 consists of six connected but distinct "halls", each given a letter from A to F. In other airports, such as JFK or LAX, these "halls" would be called terminals, so that Charles de Gaulle International Airport can be more properly described as having eight terminals altogether. When landing at or taking off from Charles de Gaulle International Airport, one should always know precisely which of the eight terminals/halls the plane arrives at or departs from, as these can be located quite far apart from each other. The six halls at Terminal 2, the newest part of the airport, has its own RER and TGV station underneath. Passengers can reach the station by using passages and moving walkways. From there, trains going to French or foreign cities can be taken. The RER station is quite far away from Terminal 1, in fact, this terminal can only be reached using the free CDG-VAL automatic light rail system (VAL). Previously, shuttle buses were used but since April 4th in 2007 CDG-VAL links all three terminals. As there is only one station for Terminal 2, passengers have to walk long distances from the CDG-VAL station to the more distant halls, such as 2B.

**Intermodality**

There are 5 surface modes of transport to access and egress from the three terminals of CDG airport, namely international train, interurban train, urban train, urban bus, taxi and private car. The high speed railway station is located in the airport below Terminal 2. Free shuttles and Personal Rapid Transit (CDG-VAL) dispatch travellers from the station to the terminals (1, 2 and 3) as well as to several car parks and vice versa. The service is suitable for passengers who have to transfer to another terminal after they have exited security and luggage claim, but also for passengers on their way to the RER/TGV/Thalys stations or parkers who need to get back to car parks.

The regional railway system (RER) has two stations to access and egress from the three terminals of the airport: one is located near Terminal 1 and 3 respectively and the other is located in Terminal 2. The access/egress from the RER station to the entrance of Terminal 1 is made by shuttles. To get from the RER station to Terminal 2, it is possible to walk or to use shuttles and/or CDG-VAL. The entrance of Terminal 3 is within a walking distance of 300 - 400 meters from the RER station.

SNCF and Air France propose together an integrated ticket that combines the use of high speed trains and aircrafts. Otherwise, combinations of surface modes of transport are not integrated with air mode of transport. Air-to-surface and surface-to-air integration has still to be developed, both from the industrial point of view and the ticket sale point of view. Actually, the integration of ticketing and ticket sales is marginal.

Eight parking locations are situated at the terminal area as near as possible to the terminals. They are all connected to the three terminals by free shuttles or free personal rapid transit systems (CDG-VAL). Five car parks are located near the terminals; three are in a long distance and dedicated to long stay. None of them is secured. All car parks are opened 24 hours a day and 7 days a week. It is possible to book a lot in advance by using Parking Premium service. Costs vary according the duration and location.
Conveniences for Passengers

The airport offers a variety of services inside each terminal. For example, nine four stars hotels, six three stars hotels, eight two stars hotels, three economy class hotels are located on the site of the airport or near to the airport. All of them but one - which can be accessed by CDG-VAL - offer a shuttle service to the airport. Further on, airline lounges, bars and restaurants, bookshops, convenience stores, electronics, fashion wear stores, gift shops, tobacco, cosmetics, toy shops, jewelleries offer their products to the passengers. Also a post office, prayer rooms, phone rental, a pharmacy, hair services, automatic teller machines (ATM), foreign exchange desks and tax refund offices exist. Car rental agencies from Hertz, Avis, Budget, Europcar, Sixt and National-Citerare are located at each terminal. These operators are all grouped at the same place in each terminal. There is also a motorcycle rental company: Aérobikes. Furthermore, information counters, lost and found offices as well as restrooms are integrated in the terminals.

There are public areas before and after passing the customs. Also airline lounges can be found there. CDG Airlines lounges mostly offer phone, fax, internet access and other business services, along with provisions to enhance comfort such as complimentary drinks, snacks, comfortable seating and quieter environments. However, access to airport lounges is limited and restricted to business, first class and/or frequent flyer only. Furthermore, some lounges could be shared by several airlines. Finally, mini play areas are located near check-in and departure gates. Wireless internet is available at waiting areas near the departure gates.

Facilities for handicapped travellers are available at the airport as long as they inform their airlines in advance of the special needs and assistance. Information desks also offer a special welcome service for handicapped passengers. Finally, reserved parking spaces in designated areas and discounts on parking are available on presentation of a valid disability badge.

There are no luggage lockers at CDG airport but the society "bagages du monde" proposes a similar service with specific conditions at higher costs than classical luggage lockers. This service is available at Terminal 2A, Terminal 2F, and Terminal 1. Luggage carriers mostly are employed by the airlines or the hotels, which are located in the neighbourhood of the airport. For passengers who transfer at CDG airport, luggage is checked in at the departure airport: it is not needed to pick them up and re-check them at CDG airport (up to some exceptions). For a flight, where check-in is made at CDG airport, travellers have to carry their luggage from their airport access modes to their check-in points. For egress from CDG airport, travellers will also have to carry their luggage themselves up to their egress modes. Actually, there is no luggage service when changing mode of transport at CDG airport.

Due to terrorist attacks of 9/11, security and control checkpoints have been increased. CDG airport follows strict rules and applies specific laws that are relevant to passenger air transport. They are applied by police agents, security teams as well as by airline teams.

CDG airport does not appear very clean although places are continuously furbished. The airport management should pay more attention to the improvement of this situation.
Information
There are several ways of getting information about flight schedules: internet, phone, counters, electronic counters and vocal announcements in the terminals. Airlines also provide their own information services. Information is provided in real time on all the relevant visual and vocal devices. For access and egress modes of transport, particularly rail transport, it is needed to access the stations to have available schedule and fare information on site. Otherwise, travellers have to plan their connecting trips by their own means (internet, phone).

Outstanding best practice characteristics for long distance intermodality
- Ground access to and transportation at the airport
- Availability of long distance modes and high quality of connections
- There exist combined tickets to use high speed trains and aircrafts (but air-to-surface and surface-to-air integration still has to be developed more)
- Free shuttles from the parking locations exist to reach the three terminals

Outstanding best practice for implementation
- Terminal 2 has its own RER and TGV station underneath

Characteristics of weakness
- Luggage handling at the airport
- Gates of Terminal 2 can be quite far away from each other, this causes long transfer times when changing the plane
- The railway station is far away from Terminal 1, which causes long transfer times
- Airport lounges are available only for business, first class and for frequent flyers
- CDG airport does not appear very clean although places are continuously furbished

Contact
Aéroports de Paris
Main operator
291 boulevard Raspail
75675 Paris Cedex 14
Responsible person
email: web: www.aeroportsdeparis.fr
PORT OF CALAIS
Terminal TransManche
6200 Calais
France

Technical features
Available modes: Passenger ships, ferries, international train, interurban train, international bus, interurban bus, taxi, private car, bicycle
Location: Centre of Calais
Developed area: 150 ha
Passengers per year: 11 millions
Passenger ships per year: 36 000
Number of piers for passenger transport: 5
Number of passenger shipping companies: 2
Long-distance passenger trains per year: 30 000
Regional passenger trains per year: 60 000
Long-distance buses per year: N/A
Regional buses per year: N/A
Number of local public transport lines: 2
Number of parking spaces: 500
Number of direct road exits: 2

General Information
Port of Calais is the second biggest port of Europe. The biggest port is Dover (UK), which is in collaborates intensively with the Port of Calais. On an average 53 ferry departures to Dover are offered per day operated by the ferry operators. That means, one ferry depart every 30 minutes. The majority of them are dedicated to passengers (few freight-only services). The main operator of the sea port is the Chambre de Commerce et d’Industrie de Calais (CCIC).

Structural Arrangement
Most of the passengers approach Port of Calais via private car because of its major use as link to England. The eight relevant piers are situated in the middle of the port. The bus shuttle to the city centre, taxis and car rentals (all especially for foot passengers) can be found here. Around this area different sorts of restaurants and sanitation facilities are provided. Before boarding, foot passengers can remain in a hall, which is equipped with 50 seats. For vehicle-passengers 13 000 lane meters are provided, which give capacity to 2 500 cars. Both waiting facilities are located in the restricted area.
Intermodality

Due to its geographical position Calais is a natural preferred port of destination and origin to/from England. Since decades, the majority of the passengers are travelling aboard the ferries with their own vehicles (cars, motorbikes, camper vans) or with coach operators. Nevertheless, the ferry companies are still offering crossing services for foot passengers, which are not proceeding to the boarding with a vehicle. In order to arrive or leave Calais, foot passengers can use the train service to the city centre or catch a bus or taxi heading to the Cross Channel Terminal. The railway station is situated about 1.5 km from the harbour side. To provide good services for foot passengers a shuttle bus is available, which also brings passengers to the city centre.

Calais suburban station is connected to major cities by high speed services (30 minutes to Lille / 1 hour 30 minutes to Paris and London). Coach tours are available departing from the terminal building.

The motorway A26 connects Calais to Paris (295 km). South-east to the city of Calais the A26 intersects with the A16, which is leading to Boulogne in the west (36 km) and to Belgium in the east. The terminal offers a huge parking garage for cars, buses and camper vans. Parking is free for up to two hours.

The terminal accommodates car rental companies as well.

Convenience for Passengers

In the Cross Channel terminal building passengers find 24 hours ferry ticketing booths, a bar and a restaurant. Furthermore, sanitation facilities like showers and mother-child rooms can be found as well as refreshments and snack vending machines.

A van-shuttle service to the boarding ramps is provided by the ferry companies for handicapped passengers, for example, for people with wheelchairs.

The CCIC is employing a large number of staff for security. All the terminal facilities are fenced and gates are human-controlled. The CCTV is made of 50 mobile cameras.

The cleanliness of the port is guaranteed by the staff employed by CCIC as well.

Information

Information is currently disseminated via loud speakers (inside the terminal building) or by the operator’s staff assisting in the waiting areas (marshalling lanes).

For the short term, PAXIS (LED dynamic information bill boards) will be settled in front of the marshalling lanes to inform the passengers on larger scale.

An information desk is situated inside the terminal building.
Outstanding best practice characteristics for long distance intermodality

- High speed trains are available from the outer city railway station with direct services to London, Paris and interchange with various major destinations through Lille Europe railway station (including Aéroport Charles de Gaulle-Paris)

Outstanding best practice for implementation

- Short distance walk (1 km) to Calais city / city railway station
- Numerous car-rental companies with quite accessible car parks

Characteristics of weakness

- Low frequent bus shuttle service to city centre (12 / day)
- No intercity bus services from the Cross Channel Terminal
- No direct bus shuttle to outer city railway station

Contact

Chambre de Commerce et d’Industrie de Calais
Main Operator
Boulevard des allies
6200 Calais
Responsible person: Frank-Edouard Tiberghien
Tel. +33 ((0) 321460000
email: ccic@calais.cci.fr
ZURICH CENTRAL STATION
Bahnhofsplatz 15
Zurich
Switzerland

Technical features
Available modes: International train, interurban train, urban train, urban bus, taxi, private car, bicycle
Location: Centre of Zurich
Developed area: N/A
Passengers per year: approx. 105 million
Long-distance trains per year: approx. 323 000
Regional trains per year: approx. 1 064 000
Number of platforms: 22
Number of long-distance train operators: 6
Number of regional train operators: 2
Long-distance buses per year: ca. 4 200
Regional buses per year: ca. 70 000
Number of local public transport lines: ca. 10
Number of parking spaces: ca. 100
Number of direct road exits: ca. 2

General Information
Zurich Central Station is Zurich's biggest railway station. It is in a very central position and it dispatches trains not only from all over Switzerland, but also from other countries in Europe, such as Spain, France, Italy, Austria and Germany.

In 1871 the central station of Zurich was built by the architect Jakob Friedrich Wanner. The old station was substituted by the new one due to the increase of passengers. Until 1991, this station was a dead-end station. In 1991, an underground passage was opened to enable trains to proceed to Zurich Stadelhofen. Formerly used only by the Zurich urban railway, it is now also used by the ICE tilting train.

Zurich Central Station, managed and operated by the Swiss Federal Railway (SBB), is one of the busiest train stations in the world, served by more than 2 700 trains daily. More than 350 000 passengers are frequenting the station per day and in 2020 presumably half a million passengers will be using the hub daily.

The station is busy at all times, with trains running as early as 5:00 am and as late as 1:00 am during the week. From Friday night to Sunday morning, trains operate all day and all night as part of the ZVV Nachtnetz (night network).

The station accommodates a vast underground shopping centre with over 200 shops or other businesses, which benefit from the Swiss regulation that shops located in railway
stations have longer opening hours. They are allowed to open on Sundays unlike normal shops. The huge underground "Rail City" is therefore usually bustling on Sundays, in contrast to the streets of Zurich which are largely empty.

In 2007 a very interesting cooperation between SBB and Deutsche Bahn was agreed. In this cooperation the knowledge about managing the city terminals of Zurich and Berlin respectively will be shared.

**Structural Arrangement**

In general the terminal is divided into two parts. In the south, the tracks and platforms are situated and in the north, the terminal building with its facilities can be found. On the upper level of the building the terminal management is situated, as well as a conference centre, a police station and some high quality gastronomy. On the ground floor level there are 20 tracks for trains coming from major areas in Switzerland as well as most international trains, such as the EuroCity, Cisalpino, TGV and InterCityExpress. At the same level in the main hall a variety of shops and SBB services like ticket purchase, info point, travel agency and lost and found are situated. One floor below, in the western part of the station (SZU-Station) two further tracks are situated. These are exclusive for the usage of urban railway trains (SZU S-Bahn), which head west towards Uetliberg and the western part of the canton of Zurich. A museum and the shopping passage can be found here, too. Also on the floor below, in the eastern part of the station (Mueseumsstrasse), four tracks are located. These are mainly for the regional trains in the canton.

There are possibilities for connections to other modes, as well, mainly on the western and northern side of the station where the stops of the tram and the local bus lines are located. A long distance bus terminal is located at the south-eastern part of the station (Sihlquai).

All modes offered are accessible weather protected by foot and within a walking distance of maximum 10 minutes. All modes are accessible by underground and conflict free for passengers of other modes. Barrier free accessibility is guaranteed and special services for people with restricted mobility are provided. All modes are accessible in short distance from waiting areas.

The shopping passage is located underground.

**Intermodality**

Passengers can come to or leave the terminal by train, bus, private car (only short term) and taxis. The train station is fully integrated into the urban/national train network which means that the connections of trains which run in more than 30 minutes intervals are adjusted to each other.

SBB offers excellent luggage services. In more than 50 train stations luggage can be checked-in for any kind of journey (train or plain). For arriving passengers heading for any destination in Switzerland luggage will be brought to every single train station in Switzerland automatically (by check-in on any airport worldwide).

SBB also offers services for intermodal travel partly going by car or bicycle. Vehicles can be left at any train station and be rent on destination.

SBB offers combined tickets with nearly all the skiing areas in Switzerland.

Since the commuter lines were inaugurated in 1990 the Central Station is the major hub for
the whole local train network of Zurich. On the station Museumstrasse (which is part of the Zurich Central Station) the lines S3, S5, S6, S7, S9, S11, S12, S15 and S16 are operating. Since Zurich Transport Company (Verkehrsbetriebe Zurich VBZ) began to offer outstanding services also by night, the lines SN1, SN3, SN5, SN7 and SN8 are operating at the terminal. The Zurich Main Station is also a major hub for Zurich public transport network. Numerous tram lines (3, 4, 6, 7, 10, 11, 13 and 14) and trolley buses (31 and 46) are operating at the terminal.

For passengers arriving at the station by private car, limited parking space is available, for short-term obligations with a maximum of one hour only.

Conveniences for Passengers

A unique and outstanding facility of the Central Station of Zurich is the embedded shopping centre called “Shopville”. A Swiss law defines that shops are only allowed to open on Sunday when they are located at a train station. That’s why on seven major train stations in Switzerland railcities are situated. On Zurich Central Station 250 shops and service providers out of 29 branches are established.

Also part of the train station terminal is a roofed square which is supposed to be the biggest roofed square of Europe. This square is used for public events like concerts, cinema, markets and various sport events.

An enterprise of SBB called Securitas is responsible for the security at the terminal. Securitan’s employees patrol the station concourse and platforms. They cooperate closely with railway employees, the police as well as with emergency and rescue services.

There is a service which provides luggage storage and handing over of luggage. Furthermore, luggage registration to the most railway stations in Switzerland as well as integrated check in service for the airports in Switzerland is offered there.

Ticket shops for train tickets, event tickets as well as a SBB travel agency make it rather easy to get the right tickets for non local people. Integrated ticketing for nearly all modes (excluding planes and long distance buses) are available.

Information

All information including time tables are available in four languages. Travel related information like departure time, arrival time and delays are available online, real-time at the station’s info screens and at info desks.

Information about the destinations is available on info desks, which are situated within the terminal building. There is a tourist information and a SBB travel agency which provides services like booking hotels etc. All information is available in the main hall of the train station, where all the different facilities are arranged very clearly.

Outstanding best practice characteristics for long distance intermodality

- Intermodal luggage service is available (Check in service for long distance travels possible; including airplane)
- Intermodal ticketing
- All modes are in a distance of maximum ten minutes walk
• All modes are accessible weather protected, by underground and without conflicts with passengers of other modes
• Rented cars or bicycles can be left at any railway station and be rent on destination
• Trains which come less frequent than every 30 minutes are adjusted to each other

**Outstanding best practice for implementation**
• Integrated shopping centre “shopville” with longer opening hours than other shops
• Good connection with the whole public transport system
• Exchange of knowledge about managing the railway stations in Zurich and in Berlin since 2007

**Characteristics of weakness**
• Some ticket vending machines work only with cash
• Quite crowded

**Contact**
**Schweizerische Bundesbahnen SBB Immobilien**
*Main Operator*
Effingerstraße 15
3000 Bern 65
Tel. +41 (0) 51 22 01 222
web: www.sbb.ch/immobilien
ZURICH AIRPORT
Flughafen
8058 Zurich
Switzerland

Technical features

Available modes: Aircraft, international train, interurban train, urban train, taxi, private car, bicycle
Location: 9 km north from Zurich centre
Developed area: 880 ha
Passengers per year: 23.7 million (10/2007)
Take-offs and landings per year: 283 000 (10/2007)
Number of runways: 3
Number of airlines: 100
Long-distance trains per year: ca. 150 000
Regional Trains per year: ca. 250 000
Long-distance buses per year: 0
Regional buses per year: 150 000
Number of local public transport lines: 6
Number of parking spaces: 10 000
Number of direct road exits: 3

General Information

Zurich Airport is located in Kloten in the canton of Zurich and is managed by “Unique Airport”. It is Switzerland's largest international flight gateway and hub for Airlines of Switzerland, Lufthansa and all other international airlines. “Skyguide” is responsible for all Air Traffic Control for Zurich International. In 2006 19.2 million passengers and 260 000 aircraft landings and departures were counted. About 146 destinations in 77 countries were approached.

In 2003, Zurich International completed a major expansion project in which a new parking garage and a new midfield terminal were built. An automated underground train was launched in order to move passengers between the existing terminal complex and the new terminal.

Zurich airport railway station (Zurich Flughafen) is located underneath the terminal and was inaugurated in 1980. Frequent S-Bahn (urban railway) services plus inter-regio and intercity services to Bern, Basel, Chur, Genf, Lausanne, Luzern, Konstanz, St. Gallen and Zug are provided every 30 minutes. Trains for Lugano, Zermatt or St. Moritz start once every hour.
Structural Arrangement
The terminal building of Zurich Airport consists of two complexes. The main complex incorporates all airport related facilities, gate A and gate B. The second complex, which is the new one, contains gate E. The main complex consists of several levels. At lowest level (-3) the platforms of the train station are located. One level higher (-2) the train station facilities are situated. A ticket counter, luggage check-in and a desk for train and for aircraft can be found there as well as shops, gastronomy and service providers which are accessible for all persons. The next level (-1) accommodates a broad variety of shops, gastronomy and service providers (bank, post office). At-grade level the major check in desks and links to gates A and B are situated. Plenty of shops, gastronomy and service providers can be found here. The bus terminal is located at-grade level of this building, too. Car parks are at-grade as well as on levels above.

The second complex of the terminal building of Zurich Airport consists of four levels. The lowest level incorporates the station for the underground train that links the two complexes. One level higher the security checks are established. The upper two levels are passenger areas only and include gate E.

The main modes for long distance travel (aircraft and train) are accessible in one building by foot within a maximum walking distance of ten minutes. Barrier free accessibility is guaranteed and special services for people with limited mobility are offered. All the areas are weather protected and have plenty of waiting areas.

Intermodality
The airport is very well embedded into the local and national railway network. Within 9 minutes in intervals of 10 minutes the main station of Zurich can be reached. From there nearly every 30 minutes trains are leaving to every major city of Switzerland.

The Swiss Federal Railway (SBB) offers excellent luggage services. In more than 50 train stations luggage can be checked in on the previous flight day. This is valid for all major charter airlines. For arriving passengers heading for any destination in Switzerland luggage will be brought to every single train station in Switzerland automatically (by check-in at any airport worldwide). For the areas around Tessin and Bern a door to door service for luggage is provided (This is just a test and it is not yet sure if this will be implemented in whole Switzerland). Leaving from or going to these areas can be managed without carrying any luggage.

A very unique way to approach Zurich airport is to go by bicycle. A cycle path from the city to the airport provides comfortable cycling conditions.

For passengers approaching Zurich airport by private car more than 10.000 parking spaces are available. The car parks are directly situated around the airport terminal. A special parking space for long time parking is provided, which is located outside of the area and connected to the terminal by bus.

Conveniences for Passengers
On the airport area plenty of different service locations are situated e.g. a conference centre, lounges, VIP-services, rescue service, nursery and dayrooms. In the public area 60 different
stores and restaurants are located and another 50 more are situated after the passport control. Different waiting areas like lounges and normal waiting areas for departure and arrivals are provided and well secured. Police and private security companies are responsible for the security around the whole terminal buildings.

### Information

Very clear maps of the project area are distributed around the terminal. They provide a very good overview of the airport as well as of the surrounding area and help to find your way to certain places and services.

Real time information for arrival and departure flights is available at the terminal and via internet. Train information is available online and at the airport; real time only at the airport. Information about free capacity of car parks is also available in the internet.

### Outstanding best practice characteristics for long distance intermodality

- Check-in and luggage transport service to and from the bigger train stations in Switzerland (for Tessin and Bern even a door-to-door service is provided)
- Very dense connections to the local, inter-regio and long-distance train network through an own train station which is very close situated to the Zurich main station
- Gate E is connected by an automatic people mover
- Long distance travel modes are in one building and therefore accessible by foot within a maximum of ten minutes
- Clear maps of the terminal and its surrounding area are distributed in the building

### Outstanding best practice for implementation

- Integrated train station with its shopping location
- The airport is connected with the city centre by a comfortable cycle path

### Characteristics of weakness

- Expensive

### Contact

Unique Flughafen Zurich AG

**Main Operator**

8058 Zurich

**Responsible person**

Tel. +41 (0) 43 816 2211

email: info@flughafen-zuerich.ch

web: www.unique.ch
VIENNA INTERNATIONAL AIRPORT
Flughafen Postfach 1
1300 Wien
Austria

Technical features
Available modes: Aircraft, urban train, interurban bus, urban bus, taxi, private car
Location: 20 km south-east from Vienna
Developed area: 1 000 ha
Passengers per year: 18.8 Mio. (2007)
Take-offs and landings per year: 292 000
Number of runways: 2
Number of airlines: approx. 60
Long-distance trains per year: 0
Regional Trains per year: 97 000 (266 per working day)
Long-distance buses per year: 27 500 (76 per working day)
Regional buses per year: 114 000 (314 per working day)
Number of local public transport lines: 3
Number of parking spaces: 15 000
Number of direct road exits: 2

General Information
Vienna International Airport, also called “Wien Schwechat”, is the biggest and most important airport of Austria with about 18,8 Mio. passengers in 2007. It is an important hub in the European Union and serves as a link to the new Member States in the East. It is located 20 km south-east of Vienna on the terrain of the town Schwechat.

The airport was actually built in 1938 as a military base and controlled by the British Allies in 1945. In 1954 the operating company “Flughafen Wien AG” was founded. In this corporation stocks are distributed approximately half to half to private and public stock holders. The airport was expanded step by step. Further development and projects like the construction of another terminal and an air traffic control tower are included in a masterplan (1999).

Structural Arrangement
The terminal building consists of four levels:
Arriving at the airport by private car or by taxi the complex can be entered via Terminal 1
and Terminal 2, where the check-in desks are located (Level 1). Terminal 1A, a temporary building, incorporates the check-in desks of some budget airlines, is situated opposite the actual terminal building. Passing the pass control from Terminal 2 on this level the hall leading to the departure gates (A, B and C) is entered. A broad variety of duty-free shops and restaurants can be found here.

On level 2, accessible via stairs or elevators from the duty-free area, lounges, bars and some more restaurants are offered.

The arrival zone with passport control and the luggage reclaim area is located at level 0. When entering the public area (after custom) many different restaurants are offered. Car parks and car rentals also can be found on this level. The signage indicating further train or bus connections is quite well.

At the lowest level (-1) the train stations and a supermarket are located. Here the local trains (S2 and S7) are operating as well as the CAT (City Airport Train). On this level also a covered walkway to the car parks, car rentals and the bus stop are provided.

A very good interactive overview of the structural arrangement of the airport can be found at the official airport homepage (URL: www.viennaairport.com).

Intermodality

Vienna International Airport is linked to Vienna city centre by the City Airport Train (CAT). Within 16 minutes it is possible to reach the airport non-stop from one of the major hubs of Vienna (Landstrasse). Trains in both directions leave stations every 30 minutes. A single ticket is available for 8 euro and two-way tickets cost 15 euro. As a special service for travelling with major airlines like Austrian, Lufthansa and Niki luggage can be checked in already at the station.

The urban train lines S2 and S7 operate in intervals of 30 minutes, too, but take 8 minutes more. It is the cheapest way to go to the airport – a single ticket is available for 3.40 euro. Travelling by bus is possible as well. From major hubs in Vienna (e.g. Westbahnhof, Suedbahnhof, Schwedenplatz and UNO City) buses operate to Vienna International Airport. International buses travel from the airport to the Czech Republic, Hungary and Slovenia and link the Airport of Bratislava to Vienna International Airport. Furthermore local buses serve to surrounding cities.

Vienna International Airport can be approached by private car via motorway A4 or expressway S1. Separate exits for the airport exist from both roads. More than 15 000 parking spaces can be used at the airport area, partly garages and partly out door. Prices vary with distance to the terminal building and duration of stay. Especially for arriving passengers, heading for a destination in the area around the airport the car rental service offered by several common companies might be of interest. Furthermore taxis are available in front of the main exit door.

Conveniences for Passengers

Gastronomy and shops are established nearly at each level (0, 1 and 2) of the terminal. A post office can be found in the departure Hall (Level 1, Terminal 1) next to the boarding pass
control and in the transfer area. Ten different lounges are available, where passengers can stay while waiting. In all lounges, cafés and restaurants wireless internet is provided for free. Safe deposit boxes are available for passengers in the luggage storage area for safe storage of items like keys, papers etc., which are not needed on the trip.

Luggage trolleys for passengers’ use are available at 46 collection points situated throughout Vienna Airport. Porters are on hand on request in the Departure and Arrival Halls during the hours of flight operations (porter fees: 1.50 euro per piece). The airport transfer service (tel. 7007-35910) offers transport support to elderly and impaired people. Therefore 120 wheelchairs and six handicapped accessible mini-buses for the exterior are provided.

The Vienna International Airport Medical Centre is located next to the domestic gates in the central terminal building. Staffed by medical doctors, paramedics and registered nurses, it provides first aid 24 hours a day. The Medical Centre is also a WHO-approved international vaccination centre, where all vaccinations and advice on travel medicine are available around the clock.

Passenger and luggage control is conducted by the Vienna International Airport Security Services Ges.m.b.H (a 100% daughter of Flughafen Wien AG). For assuring passengers’ safety different companies and authorities are coordinated. All safety relevant activities are conducted by a sub company of the “Flughafen Wien AG” or by an external company.

Information

Big panels indicating arrival and departure times including delays are situated in the departure and arrival halls. The same kind of information is shown on screens scattered at important places of the terminal.

Information desks are situated in the arrival hall, the bus arrival east, Terminal 2 and next to the gangway leading to gate C. On these information desks all travel relevant information (departure time, arrival time, information about service providers and airlines operating on Vienna International Airport) can be obtained. Information also can be got by the airport hotline.

Outstanding best practice characteristics for long distance intermodality

- High number of collection points for luggage trolleys
- Porters are available on request in the Departure and Arrival Halls during the hours of flight operations
- A Medical Centre is located next to the domestic gates in the central terminal building

Outstanding best practice for implementation

- Transfer service for elderly and impaired people
- Check-in is possible already at the inner-city railway station in Vienna
Characteristics of weakness

- Long-distance trains do not stop at the airport

Contact

Flughafen Wien AG
Main Operator
Flughafen
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1300 Vienna
Responsible person
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LINZ CENTRAL STATION
Bahnhofsplatz 3-6
4020 Linz
Austria

Technical features
Available modes: International train, interurban train, urban train, interurban bus, urban bus, tramway, taxi, private car, bicycle and pedestrians
Location: 2 km south of the centre of Linz
Developed area: N/A
Passengers per year: 11 million
Long-distance trains per year: N/A
Regional trains per year: N/A
Number of platforms: 14
Number of long-distance train operators: N/A
Number of regional train operators: N/A
Long-distance buses per year: N/A
Regional buses per year: N/A
Number of local public transport lines: approx. 14
Number of parking spaces: 450
Number of direct road exits: 0

General Information
The central station of Linz is located very close to the city centre. The station is the most important hub for the region of Linz and the surrounding area. Linz is situated between Vienna and Salzburg on the western track. The station is also the junction where the southern and northern tracks meet, leading to Italy, Slovenia as well as to the Czech Republic. The terminal serves interurban and international trains (Westbahn, Pyhrnbahn and Summerauerbahn), urban and regional buses as well as tramways. With approximately 30,000 passengers per day the central station of Linz is one of the most important train stations of Austria.

The railway building was put up in 1860 and rebuilt after the second world war in 1950. Due to the increasing number of passengers the terminal had been extended and modernised in 2004. The design was done by the architect “Holzbauer und Partner”. The owner of the terminal is the “OEBB Infrastruktur Bau AG”. The construction was accomplished by a consortium of the “OEBB – Immobilienmanagement GmbH”, the “Linz Linien AG” and “Real-Treuhand Immobilien GmbH”. This consortium was abrogated when finishing construction work.
Structural Arrangement

A specific characteristic of the terminal is the compact arrangement of facilities. Train platforms, the bus terminal, parking garages and the tramway station are aggregated in one complex of buildings (including also an administration building of the provincial government). Therefore the routes and transfers between different modes are rather short and well accessible.

The main railway station was redesigned to optimise the interchange between regional and urban public transport. The building has three levels. The inner city tram network was changed in that way that all tram-lines have a stop beneath the railway station (underground tram link). Further, the central bus-station was integrated within the railway building. Additionally to the public transport improvements the railway station was developed as a new centre of shopping and meeting point. The gastro- and shopping-passage now stretches across two floors on about 5500m² floor space. At the moment 35 companies are settled (2006). The variety of businesses ranges from food, flowers, chemist, souvenirs, banks to car rental agency etc.

The waiting areas, information desk and ticket counters are also situated on the main level. The rest rooms are located opposite the counters.

Elevators and escalators in addition to stairways guarantee a barrier free access to all three levels and platforms for all passengers.

Public parking garages are located next to the bus terminal and close to the governmental building. Indoor access is provided from all three levels. The taxi stand is located in front of the main entrance and is weather protected by a projecting roof.

Intermodality

The central station of Linz is located 2 km from the city centre of Linz. The access and egress to and from the station is guaranteed by the tramway, the urban and local bus lines as well as by urban, interurban and international train connections. Travellers may also arrive by private car, taxi or by bike. A cycle lane is passing the station.

Park & Ride facilities like car parks and cycle stands are provided. The two chargeable parking garages provide a total number of 450 car spaces. Free parking service is offered for handicapped people. The routes from the garages to the terminal building are indoor and rather short. For Park & Ride 1 188 cycle stands are provided in the garage of the close-by governmental building. 488 are positioned outside and 700 are inside this garage containing as an additional service 26 cycle boxes, where bicycles can be locked. These boxes can be rent for 75 euro per year and are a great advantage in terms of protection against vandalism. Cyclists can reach the platforms within a short walking distance.

From the bus terminal a shuttle bus to Linz Blue Danube Airport is operating.

Information about arrival and departure times and about further connections is provided by big screens in the main hall. The same information is shown on small screens on various positions like platforms (also tramway and bus) and passageways as well.
The ÖBB offers some special services for intermodal journeys at this terminal. A very useful service is the door to door luggage transfer. Luggage, bicycles, buggies and skis may be picked up at home the day before travel and are brought to the final destination. For international journeys luggage needs to be picked up earlier.

Conveniences for Passengers

The waiting facilities at the terminal are adequate and well equipped. For regular passengers a common waiting room with seats is provided. First class ticket holders have access to the comfortable ÖBB club lounge.

Tickets can be purchased at the ÖBB ticket counter (operating from 6.00 to 21.00 o’clock) or easily at the ticket machines, both on the main level.

A self service food mile, situated at the main level, is open all week long (including Sunday). Greek, Italian, Chinese and Austrian food is served there. Facilities for daily use and consumption like e.g. a supermarket, a bakery, a tobacconist, a hairdresser and an internet café are also available. These shops are closed on Sunday. On the forecourt outside of the train station a post office with extended opening hours is located. Inside the terminal building three branches of banks are resident. A cash machine is situated next to the ÖBB ticket counters and ticket machines respectively.

On the main level half way to the parking garage 98 lockers for luggage are situated. Costs vary with size from 2 euro up to 3.5 euro. Lost luggage can be found at the lost and found office.

All routes to the platforms are equipped with ripped stripes on the floor to guarantee the orientation as a special service for blind passengers. The beginning of the handrail is labelled with the number of the platform in brail.

The whole building consists of light and modern architecture and therefore appears friendly, safe and clean. On several positions of the building CCTV is installed for the passengers’ safety. Also emergency phones are distributed at the terminal in order to call staff in case of endangerment.

The terminal building is opened 24 hours a day.

Information

The terminal’s signage is ample, sufficient and international comprehensible. In the middle of the main hall an information desk is situated. It staff provides detailed information about all kinds of travel issues.

A tourist office is situated next to the ÖBB ticket counter providing information about hotel booking and tourist attractions.

In order to find pre-booked seats easier carriage position indicators explaining the arrangement of the carriages are placed at the platforms. Also the position of the first class carriages and the board restaurant are indicated.
Outstanding best practice characteristics for long distance intermodality

- Short walking distances
- Compact arrangement of facilities
- Well embedded the network of public transport and therefore good accessibility
- Real time information on all platforms (train, bus, tram)
- Barrier-free accessibility throughout the whole terminal building
- Shuttle-bus to Linz Blue Danube Airport

Outstanding best practice for implementation

- Accomplishment of construction by a deliberately founded organisation which was abrogated when finishing the construction work

Characteristics of weakness

- N/A

Contact

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Fax 0732/3400-7009
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www.linzag.at
COPENHAGEN AIRPORT
P.O. Box 74
Lufthavnsboulevarden 6
DK-2770 Kastrup
Denmark

Technical features
Available modes: Aircraft, metro, interurban/urban train, international/interurban/urban bus, taxi, private car
Location: about 8 km south of Copenhagen City Centre in Kastrup
Developed area: 11.8 km²
Passengers per year: 21.4 million (2007)
Take-offs and landings per year: 257 591 (2007)
Number of runways: 3
Number of airlines: 58
Long-distance trains per year: N/A
Regional Trains per year: N/A
Long-distance buses per year: N/A
Regional buses per year: N/A
Number of local public transport lines: approx. 7
Number of parking spaces: 11 700
Number of direct road exits: 3

(Source: http://commons.wikimedia.org, by Thierry Caro, 06/2008)

General Information
Copenhagen Airport with about 21.4 Mio. passengers in 2007 is located about 8 kilometres south of the city centre of Copenhagen in Kastrup, a town on the island of Amager. Therefore the formal name is still Copenhagen Airport, Kastrup. Founded in 1925, Copenhagen Airport was one of the first civil airports in the world.

Copenhagen Airport is the main airport of Scandinavia. Direct available connections to a total of 132 destinations worldwide (19 Intercontinental, 84 European, 22 Nordic and 7 Domestic) underline the function as a transfer airport for air traffic between other parts of the world and many national and regional airports in Scandinavia and the area south of the Baltic Sea.

After the end of World War II Copenhagen Airport was ready for tremendous growth. Take-offs and landings developed from 6 000 in 1932 up to almost 258 000 in 2007. Further important improvements are the opening of a new Transfer Centre in 2005, where transit passengers can go for information no matter which airline they are flying with and the integration of the metro station into the terminal complex in the year 2007.
Copenhagen Airports A/S is the listed company which owns and operates the airports at Copenhagen and Roskilde.

In 2004, the Airport Council International (ACI) appointed CPH as “Best Airport in Europe”, an award which is based on a survey conducted with over 100,000 passengers worldwide. One year later, the Copenhagen Airport received this award once again together with the Brussels Airport.

**Structural Arrangement**

The Airport has three passenger terminals, which are connected with a free shuttle bus:

Terminal 1 consists of seven interconnected pavilions and is therefore called "The Seven Small Homes". The first part of the domestic terminal, now called Terminal 1, which contains Gates 0-5, opened in February 1969. Gate 6 forms part of the airport noise shield.

Terminals 2 and 3 share a common airside passenger concourse and the arrivals section (customs and luggage claim) which is physically located in Terminal 3. In addition to the departure hall and transit area, Terminal 2 also houses technical and office facilities.

Terminal 3 consists of two double, curved-edge triangles on either side of a skylight strip running the length of the terminal. The railway platform is located in Terminal 3. There are lifts and travelators between the platforms and terminal. Two car parks (P6, P7) with a combined space of 30,000 square metres also belong to the terminals. An indoor passage connects Terminal 3 with the Hilton Copenhagen Airport.

**Intermodality**

The metro line M2 of the Copenhagen Metro links Copenhagen airport with the city centre at 4-6 minutes intervals during day and evening hours, every 15 minutes during the night (from five o'clock a.m. until midnight, Thursday until Sunday around the clock). The travel time is 15 minutes (from/to Nørreport Station in central Copenhagen). The Metro station Lufthavnen is located at the end of Terminal 3. There are two self-service kiosks where passengers can print out both boarding cards and luggage tags themselves. All major airlines are connected to these kiosks. Tickets for the Metro can be bought at the metro station and at DSB ticket sales counter in Terminal 3 and cost about 4 EUR (30DKK).

The Copenhagen Airport can be reached by train on Øresund Railway Line at the railway platforms in Terminal 3: there are InterCity, high-speed and regional train services to Denmark and Sweden served by DSB and Skåne commuter rail trains. It takes 12 minutes to travel by train from Copenhagen Airport to the Copenhagen Central Station and 20 minutes to Malmoe (Sweden). Trains leave the station e.g. every 10 minutes to Copenhagen, and every 20 minutes to Malmoe. Beside the DSB ticket office within the building of terminal, three tickets and travel cards (for the Copenhagen and Northern Zealand HT-zone) are also available from ticket machines in the station area.

There are Movia buses lines 5A, 35, 36, 75E, 76E, further lines 96N, Sweden can be reached across the Øresund bridge with Gråhundbus bus 999 (Copenhagen-Malmö-Lund), and line 866 bus (Copenhagen-Ystad-Rønne), also line 888 - express-bus to Jutland stop at the airport. There are long-distance buses to Sweden (swebusexpress, eurolines,
säfflebussen). Line 5A takes about 40 minutes between city centre and airport. Between the terminals there is a free shuttle bus (every 10 minutes, 5 minutes travel time).

The airport can be reached via motorway E20 by car; junctions 15, 16, and 17 are situated nearby. Via the Øresund Bridge the airport is connected to Sweden. The airport offers about 11,700 parking spaces. Customers can pre-book their parking space online by visiting the Copenhagen Airport website. All car parks are monitored 24 hours by video cameras and security guards. Daily parking rates range from DKK 45 (EUR 6) to DKK 360 (EUR 48), depending on the location of the car park (the least expensive parking lot is 2200 metres from the terminals). Next to the P4 or P6 car park there are special Kiss & Ride opportunities. Additionally, free parking is possible in all parking areas for up to 15 minutes.

Areas where Taxis can drop off passengers are situated outside Terminal 1, 2 and 3. Passengers can be picked up outside all arrival areas (Terminal 1 and Terminal 3).

Eight different car rental companies, located at Terminal 1 and 3, offer their service at the Copenhagen Airport.

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**Conveniences for Passengers**

Copenhagen Airport offers a large spectrum of gastronomy (bars/cafés, restaurants, fast food) and shopping facilities prior and after the security check. There are five lounges and further meeting facilities in the Hilton hotel. The smoking area is located on the balcony in Terminal 2.

Five banks inside the Terminal 2 offer their services for travellers.

At the Terminal 2 special services for parents with children are offered: A family area has facilities for children/teenagers and seating for adults. There is further a baby changing room located on the lower level next to the Transfer Hotel offering facilities for heating bottles. In addition, most toilets have facilities for changing diapers.

Telephones are spread in all of the terminals; wireless access to the internet is possible from most locations in Copenhagen Airport.

Luggage lockers are located in the indoor parking facilities (P4). The charge for using a locker for one day is DKK 30 (EUR 4) respectively DKK 60 (EUR 8) for a large one. The maximum rental period is 72 hours. The odd size luggage service is located at Terminal 3. There is also a left-luggage department located in the Arcade (between Terminals 2 and 3), where it is possible to store your luggage for a period of up to four weeks.

Security control of the airport areas, passengers and luggage at Copenhagen Airport is carried out by the company Copenhagen Airports (CPH) and the police. Police tasks are handled in consultation and collaboration with the Civil Aviation Administration (CAA-DK) and the security managers at the airport.

In 2008, further investments will be made in check-in facilities, gates and aircraft stands, luggage facilities, security, commercial projects and other passenger service improvements.
Information
Within the terminals there are lots of big screens with real time information indicating arrival and departure times.

Service information desks are located in Terminal 2 (Service Information Transit Area) and after customs control in Terminal 3 and open from 5 am to 12 pm. Information are offered concerning airport facilities and Copenhagen city. Furthermore, the Copenhagen Card can be bought there.

Outstanding best practice characteristics for long distance intermodality
- A new connecting pier between Terminal 1 and 2 (opened 2006) offers moving sidewalks for passengers in order to ease the way from the domestic terminal to the international terminals or vice versa
- A new transfer centre was opened in 2005, where transit passengers can get information, no matter which airline they are flying with
- Passengers can print their boarding cards and luggage tags for themselves at two self-service kiosks
- Good connection with local and regional public transport modes, also leading to Sweden

Outstanding best practice for implementation
- The underground station was integrated into the airport complex in 2007
- At Terminal 2 special services for parents with children are offered (family area, baby changing room, facilities for heating bottles and others)

Characteristics of weakness
- N/A

Contact
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PORT OF TALLINN
Sadam 25
15051 Tallinn
Estonia

Technical features
Available modes: Passenger ships, cargo ships, international bus, interurban bus, tramway, taxi, private car, bicycle
Location: In the centre of Tallinn
Developed area: ~ 20 ha
Passengers per year: 6.7 million (2006)
Passenger ships per year: 9,000
Number of piers for passenger transport: 23
Number of passenger shipping companies: 5
Long-distance passenger trains per year: 0
Regional passenger trains per year: 0
Long-distance buses per year: 1,000
Regional buses per year: 700
Number of local public transport lines: 2
Number of parking spaces: 2 car parks
Number of direct road exits: 2

(Source: www.trekbaltics.com, 06/2008)

General Information
Port of Tallinn is one of the biggest and busiest passenger ports in the Baltic region and considering the international regular passenger traffic only, it is among the traffic leaders in the whole world. Nearly seven million passengers pass Port of Tallinn’s terminals per year with a lion’s share served in the Old City Harbour.

Old City Harbour is situated right at the gate of the medieval old town. With its four modern passenger terminals the harbour is a berthing place for passenger ferries and cruise ships, and during summer season also for high-speed vessels.

In order to fit effectively into the competitive environment, Port of Tallinn underwent a complete restructuring process in the mid 1990s by developing from a service port into a port of landlord type. In 1999, the last cargo handling operations were finally given into the hands of private companies. Today, Port of Tallinn operates as a landlord type of port with no cargo handling operations of its own.
Port of Tallinn consists of five constituent harbours:

- Muuga Harbour
- Old City Harbour
- Paljassaare Harbour
- Paldiski South Harbour
- Saaremaa Harbour

All harbours are navigable all the year round and easily approachable with depths of up to 18 meters enabling them to receive all vessels able to pass the Danish Straits (URL: www.portoftallinn.com).

**Structural Arrangement**

The majority of passengers arrive and depart from the old city harbour. The old city harbour consists of four terminals (A, B, C and D), which all are equipped with weather protected gangways from the terminal to the ships.

Terminal A consists of two levels and can be entered at lower level. In front of the entrance the taxi stand is located. At this at-grade level some facilities for daily use and consumption, bathrooms and the check-in counters for Vikingline and Eckeröline are situated. The passageways to the ships are at upper level, which can be accessed by stairs, escalator or elevator. Entering this level the security check and passport control are processed. Further on, the ships can be entered barrier free and weather protected.

Terminal B is entered at-grade level. From there stairs and a lift lead to the upper level where the boarding procedures are processed. Passing the passport control the passageways to the ships, which are barrier free and fully weather protected, can be reached.

Terminal C is a one-level terminal and designed to process departing and arriving passengers simultaneously. Next to the main entrance a bicycle terminal is situated. The terminal building is among other things equipped with a business lounge and check-in desks for Vikingline and Eckeröline. The passageways to the ships are at-grade level, barrier free and weather protected.

Terminal D consists of three levels. The passageways to the ships are accessible from the upper floor. On this level the passport control and security check are positioned. Shops, a bar, terminal information, etc. are provided. All levels can be reached via stairs, escalators and elevators.

All terminals are arranged compactly and are comparable to an airport terminal.

**Intermodality**

It is easy to reach the Old Harbour by public transport. Bus stops are situated close to the terminals. Some hundred meters walking distance from the terminals the local tramway (tram lines 1 and 2) is operating. Buses and trams operate regularly from 6 a.m. to 11 p.m.
Tickets can be purchased at newsstands in the terminal. Those holding valid ISIC/ITIC cards can apply for a ticket at a reduced price. Tallinn Card holders may use unlimited public transportation free of charge. Tallinn Card can be purchased from the tourist information office in passenger Terminal A. Bus no. 2 runs between the harbour and airport via the city centre.

All terminals can be reached easily via private car or taxi. Two paid guarded parking lots on harbour territory are located by Terminal C and Terminal D for short term as well as for long term parking. Taxi stands are located next to the passenger terminal buildings.

Velotaxes (bicycle taxis) provide a funny and environment-friendly way of getting around the city centre and harbour area. They operate from March to October.

Convenience for Passengers

The barrier-free terminals are equipped with harbour and tourist information centres, pharmacies, currency exchange offices, cash machines, insurance agencies, a left-luggage office, bars and shops. Three hotels are located at the harbour area.

It is possible to store hand luggage in the Old City Harbour Terminals A, C and D. Luggage boxes require 1 euro or 50 euro cent coins. The charge for a larger box is 2 euros/24h, for a smaller box 1 euro/24h.

All port facilities have security plans approved by the national maritime authority and compliant with ISPS requirements.

Information

All information is provided in native and English language. Online timetables are offered as well as information desks both for harbour and tourist information. Schedules are also available via internet (www.portoftallinn.com).

Outstanding best practice characteristics for long distance intermodality

- N/A

Outstanding best practice for implementation

- Based on the results of the customer satisfaction and competitive position surveys it can be affirmed that the implemented process and client-centred management model has ensured better quality of customer service and increased the Company's competitiveness
- During the last years Port of Tallinn has put a lot of effort into planning (development plan), feasibility studies, analysing the needs of the clients. Port of Tallinn is determined to pursue the highest quality and environmental standards to ensure the well-being of all its stakeholders
- The harbour is situated right at the gate of the city centre of Calais and so it is easy to reach the Old Harbour by public transport.

**Characteristics of weakness**
- N/A

**Contact**
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*Main Operator*  
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web: www.portoftallinn.com
**LONDON STANSTED AIRPORT**

Essex CM 24 1 QW

United Kingdom

**Technical features**

**Available modes:** Aircraft, international/interurban train, international/interurban bus, urban bus, taxi, private car

**Location:** 55km north east from London

**Developed area:** 950 ha

**Passengers per year:** 23.7 million (08/2007)

**Take-offs and landings per year:** 192 000

**Number of runways:** 1 (3 048 meters each)

**Number of airlines:** 46

**Long-distance trains per year:** approx. 5 000

**Regional Trains per year:** approx. 50 000 (6 per hour)

**Long-distance buses per year:** approx. 240 000

**Regional buses per year:** approx. 100 000

**Number of local public transport lines:** 7 buses

**Number of parking spaces:** N/A

**Number of direct road exits:** 2

(Source: URL: www.tjonesmeetandgreet.co.uk, 06/2008)

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**General Information**

London Stansted International Airport is located in the Uttlesford District of the county of Essex about 55 km north-east of London. It is the third largest airport serving the London area after Heathrow and Gatwick.

Stansted was officially founded in 1942. After a period of military use Stansted was placed under BAA (British Airport Authority) control in 1966. In 1970 a new terminal was built to handle increasing numbers of passengers. Stansted was mainly used by holiday charter operators evading the high costs at Heathrow and Gatwick. From the outset it was planned to develop Stansted into London's third airport, to relieve Heathrow and Gatwick. After a long public consultation process the Government gave the permission for the extension of Stansted Airport in 1985. The construction of the new terminal designed by Sir Norman Foster was completed in March 1991. Further extensions are already terminated.

Today London Stansted International Airport has a capacity of 23.68 Mio passengers per year. Forty-four scheduled and charter airlines are serving 160 destinations in 34 countries.
Structural Arrangement

The design of the airport ensures a smooth trip through the terminal, which has two levels. It has two terminals, an international and a domestic one integrated on the ground level. Therefore the routes from the main entrance through the check-in hall to the departure gates are all on the same level and mainly supported by treadmills. Exterior gates are barrier free accessible by escalators and lifts.

The airport railway station is situated below the air terminal building. The coach station is situated close in front of the terminal building with direct access to the building. All routes to the train station and coach station are barrier free and supported by escalators and lifts. The platforms of the bus terminal are weather protected.

Close to the airport terminal the United Business Centre or UBC Conference provides conference facilities. On request a shuttle can be arranged for the transfer of delegates between conference hall and Stansted airport.

Intermodality

Stansted is connected to the northeast of London and Cambridge by the M11 motorway. The travel time to go there is about 70 minutes by car. The access from the motorway has recently been improved with a new grade-separated junction.

Stansted Airport offers a very good access and egress by public transport to London and the greater region. At the train station in the basement of the terminal trains leave to Cambridge, Leicester and the Midlands every 60 minutes operated by CrossCountry Trains. The Stansted Express train leaves for London Liverpool Street Station every 15 minutes with 45 minutes travel time. The current fare for a two-way ticket is 24 GBP (approx. 37.50 EUR). Train tickets can be purchased at the railway station.

The airport bus station is located in the terminal forecourt. Scheduled express bus and coach services are operating between Stratford, Victoria Coach Station, Liverpool Street Station and Golders Green. National Express runs scheduled but infrequent coach services to Oxford Airport and Cambridge. EasyCoach provides the connection between the airport and Baker Street, Central London. Adult two-way tickets cost 14 GBP and the travel time to London Liverpool Street Station is 55 to 75 minutes.

Train tickets can be purchased at the railway station. Bus tickets can be bought at the coach ticket desk in the arrival area of the terminal (06:00 to 21:30) or in the coach station (24 hours a day, 7 days a week). Tickets may also be purchased on the coach.

For security reasons, private cars may not stop on the terminal forecourt for any purpose other than to set down passengers. The car parks are classified for different kind of purposes: for long stay, mid stay, short stay, valet parking and fast track parking. While the short stay car parks are located close to the terminal building, the long stay parking lots are further away and connected with efficient transfer. All car parks are provided with security by CCTV, security fences and regular patrols. One feature of the Stansted parking scheme is the possibility to book parking spaces via internet in advance.
Convenience for Passengers

Besides the common waiting areas, shops and restaurants an exclusive lounge is available to all passengers for a small charge; it is not exclusively for business or corporate travellers. The information desk at the international arrival area offers a wide range of facilities like photocopying, faxing, paging cards and shower access including towels. Very comfortable are the opening hours from 05:30 - midnight.

Passengers will find wireless internet access points throughout the Airport. Wireless compatible laptops or handheld computers can be used to connect instantly to the internet within these wireless hotspots. Fixed internet access points are available before and after security check.

There are trolleys provided throughout the terminal building. It is possible to call assistance when problems with luggage handling occur. Help points are located within of each short stay car parks, the fast track and the pick up areas. Help-phones are situated outside the entry doors and along the outer lane pavement. With these help-phones the passengers can order free wheelchair provision or help with luggage on the way from the car parks to check-in. London Stansted Airport’s facilities for handicapped people include wide wheelchair access pathways and ramps, accessible telephones, toilet facilities and dedicated seating throughout the airport. Furthermore, facilities for handicapped passengers include dedicated parking spaces, induction loops, specially designed toilets, a minicom system (easy to use text telephone for deaf and hard of hearing people) and reserved seating with low-level flight information monitors and service numbers for special information for impaired people.

Information

Information about further connections and travel opportunities are provided on diverse media on the airport.

At the international arrival area, bus and train operators offer information desks and ticket offices. The airport information desk is located in the international arrival area. It provides help with rail and bus enquiries, flight information and paging calls. Help-phones are situated all over the terminal. It is also possible to check real time information about arrival and departure times online.

Very good is the signage system leading passengers by clear signs directly to passport control, luggage reclaim, to the local transport links and the three airport car parks. Signs are in yellow and black to ensure high contrasts for visually impaired people.

Outstanding best practice characteristics for long distance intermodality

- The railway station is situated underneath the terminal building
- The weather protected coach station is situated in front of the airport with direct access to the building
- Good connection to the local and regional public transport system of London and the broader region (e.g. Stansted Express)
• Parking spaces can be booked in advance via Internet
• Shops in the Terminal are open from 5.30 a.m. until midnight
• Several special services for handicapped persons

**Outstanding best practice for implementation**

• Conference facilities are located in the United Business Centre (UBC) near the terminal
• The motorway which leads to the terminal building has been improved by the construction of a grade-separated junction
• Help Phones are situated outside the terminal and along the outer lane pavement in order to request the provision of a free wheelchair or to ask for help with the luggage

**Characteristics of weakness**

• Far away from the city centre of London
• Tickets for public transport are expensive

**Contact**

BAA  
Department of Public Affairs  
Enterprise House  
Stansted Airport  
Essix CM241QW  
Tel. 0044 (0) 800 7831764  
email: stanstedpublicaffairs@baa.com  
web: www.stanstedairport.com
PRAHA RUZYNÉ AIRPORT
Kletisti 1019/6
16100 Praha Ruzyne
Czech Republic

Technical features
Available modes: Aircraft, international bus, interurban bus, urban bus, taxi, private car
Location: 13 km west from the centre of Prague
Developed area: 300 000 m²
Passengers per year: 12.5 million
Take-offs and landings per year: 150 000
Number of runways: 2
Number of airlines: 50
Long-distance trains per year: N/A
Regional Trains per year: N/A
Long-distance buses per year: 12 000
Regional buses per year: N/A
Number of local public transport lines: 7
Number of parking spaces: 6 000
Number of direct road exits: 1

(Source: URL: http://commons.wikipedia.org, by Hynek Moravec, 06/2008)

General Information
Ruzyně International Airport serves Prague, capital of the Czech Republic. Located 10 km from the city centre, the airport is a hub for Czech Airlines. It was opened on April 5th in 1937. Prague-Ruzyně is the biggest airport in the Czech Republic and with 11.6 million passengers in 2006 the busiest one within the new EU member states. In 2005 and 2007 it was named the best airport in Central and Eastern Europe by the British company Skytrax. Millions of passengers were asked particularly concerning availability and quality of services. Especially the high number of travelators for a comfortable change of transport modes, the quick luggage handling, the service of the transit hotel and the good signage were evaluated as outstanding good services by the passengers.

The airport has an excellent location within the European area on the one hand and on the other hand a short distance to the city centre of Prague. Moreover, the Ruzyně fields provide opportunities for further expansion of the airport according to the increasing capacity demand. The airport serves as a hub of the Trans-European Airport Network.

Most flights take off Ruzyně International Airport from the Northern Terminals (North 1 and North 2). The Southern Terminals (South 1 and South 2) handle a few irregular flights, as well as VIP flights, special flights and small aircrafts.
Structural Arrangement

In general the airport is divided into three terminals. Two of them (T1 and T2) are situated close to each other. Here, the common services are processed. Terminal 3 (T3) is located more southern and is used for VIP services. Close to terminal one and two the parking facilities (long-, mid- and short term) are situated.

Terminal 1 consists of three floors. At-grade level the terminal can be left or entered. After passing the passport control a variety of shops, bars, bathrooms, gastronomy and a mother-child area can be found. On this level the departure and the arrival gates are situated. On lower level (level -1) VIP passengers have got access. In front of the entrance a special car park is located. Level +1 is equipped with a casino, lounges and restaurants.

Terminal 2 is arranged differently. On the ground floor level the arrival procedure is organized. Departure is organized on upper level. The whole building is provided with shops, gastronomy and bathrooms.

All buildings are accessible barrier free and are equipped with elevators and escalators. In some sections of the building, where long walking distances have to be overcome, even conveyer belts are provided.

Intermodality

Public transport from the airport to Prague city centre involves taking the bus number 119 to Dejvická metro station and transferring on to the green metro line (Line A). Another way to get to the Airport by means of public transport of Prague is to take the express number 100 to Zličín metro station (yellow Line B). A regular trip takes about 15 to 20 minutes. Bus stops are situated at every terminal.

The bus line AE (Airport Express) is recommended for a quick transfer to the Central Station of Prague. It is synchronised with the arrival and departure times of the SC Pendolino, the Eurocity and the Intercity trains. Special fares are available, which include further connections. The AE operates every day from 5.00 to 22.00 with an interval of 30 minutes. This service links the railway station Holešovice with the airport and costs 45 CZK (approx. 3.5 euro). Some other bus services operate after midnight as well, when the metro line is closed. Czech interurban direct bus links to and from the airport are available from Brno and Karlovy Vary.

The airport can be approached and left by door to door passenger transport services with fixed fares. This service is offered by two different private companies and is guaranteed by contract. Also a minibus service is available. Two different types of transfers can be booked. On the one hand a regular service with fixed fares from certain places of Prague is operating in intervals of 30 minutes to and from the airport. On the other hand an individual service with varying fares is operating to any place in Prague. Further on taxis are available at the airport.

Individual drivers may use the motorway exit in order to get to the airport conveniently and use the parking facilities, which are located close to Terminal 1 and 2. Parking space is free for short term users and is subject of charges for medium and long term parkers.
Conveniences for Passengers

The airport is equipped with facilities like restaurants (4), bars (10), an exchange office, shops (70), hotels (4), car rentals (9), a post office, a bank, pharmacy, non-stop health care and a permanent medical service. The airport also offers a non-stop left-luggage office for the price of 2 euro per piece. Lost luggage is kept by the airport crew and is stored until the owner is found. Also a porter service and luggage trolleys are provided.

On the way to the gates waiting areas are situated. They are equipped with a sufficient number of seats. For a longer stay at the terminal child-mother centres are provided. Business and first class travellers may use various lounges, which are scattered through the terminals. Airport guards and security check-in services are provided by the airport operator. Convenient check-in is possible with the electronic check-in system.

Information

Information about departure and arrival times can be obtained by phone or via internet, where an online travel planner is accessible as well. A very unique information system is the SMS-info. When texting the flight number to a certain telephone number, a message will return including all travel relevant information like departure time, arrival time, boarding time, gate to go and delay. At the terminal real time information is provided on neuralgic points of the airport. This information is obtained via screens and information panels.

Outstanding best practice characteristics for long distance intermodality

- Good connection to the local and regional public transport system
- The transfer from the Airport to the Central Railway Station in Prague is adjusted to the arrival and departure times of long-distance and regional trains
- There exist door-to-door passenger transport for fixed prices
- Travel relevant information can be requested by SMS
- Quick luggage handling

Outstanding best practice for implementation

- High number of travelators for a comfortable change of transport modes
- Good signage
- Travel information can be requested via phone, internet as well as via SMS
Characteristics of weakness

- In some sections of the building passengers have to overcome long distances when changing or taking a plane

Contact

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Prague – Ruzyne Airport
16008 Prague 6
Tel. +420 2 2011 1111
email: info@prg.aero
web: www.prg.aero
BRUSSELS AIRPORT
Station Brussel Luchthaven
B-1930 Zaventem
Belgium

Technical features
Available modes: aircraft, international train, interurban train, urban train, regional bus, international bus, interurban bus, urban bus, taxi, private car, bicycle
Location: Brussels National Airport Zaventem
Developed area: (terminal only): 60 ha
Passengers per year: 17.8 million (2007)
Take-offs and landings per year: 256 000
Number of runways: 3
Number of airlines: 90% scheduled flights
Long-distance trains per year: 0
Regional Trains per year: 86 000
Long-distance buses per year: 10 800
Regional buses per year: 275 200
Number of local public transport lines: 2
Number of parking spaces: 12 500
Number of direct road exits: 1

General Information
Brussels Airport, also called Zaventem Airport or Brussels (Zaventem) International Airport, was formerly known as "Brussel Nationaal/Bruxelles-National" (Brussels National). It is an international airport located in Zaventem, in Flanders, near Brussels, Belgium. The airport is a hub to Brussels Airlines, European Air Transport, Jet Airways, Singapore Airlines Cargo, Eva Air Cargo and Saudia Arabian Cargo. It is also a hub for a private company called Abelag Aviation. The airport incorporates around 260 companies, together directly employing 20 000 people. It also plays a role as a regional hub for express package transport.

In 2005, the airport was awarded “Best Airport in Europe” by ACI/IATA, based on a survey conducted with over 100 000 passengers worldwide. The company operating the airport is known as "The Brussels Airport Company N.V./S.A."; before the 19th October in 2006, the name was BIAC (Brussels International Airport Company). The whole airport complex except the ‘-2’ (railway level), is managed by the airport authority BIAC (a kind of public private partnership construction).
Some parking spaces are operated by a European parking managing group. The station is supervised by the national railway company of Belgium NMBS.

The airport was constructed during World War II by the German occupying force. After the Germans left, the Belgian army took control of the airport. When the old civilian airport in Haren became too small, it was decided to use the site in Zaventem for the new national airport.

By 1948, a new terminal building was constructed to replace the old wooden building. In 1955, a train line connecting Brussels with the airport was constructed. A direct train link with Leuven and Liège was opened in 2005. A link with Antwerp will be completed in 2010. A new 'low-cost airlines' pier will be completed before the end of 2009. It will be built in place of the old south pier. At present, several low-cost airlines including Ryanair and Wizzair fly to "Brussels South Airport", actually located in Charleroi, 40 km away from Brussels.

In 2005, the airport served 16.2 million passengers, an increase of 3.5% over 2004. The cargo volume in the same year amounted to 702 819 tonnes, an increase of 5.8% over 2004.

**Structural Arrangement**

The airport consists of a big complex, which accommodates all passenger relevant and administrative services. To the front side the terminals and gates are situated, to the back side the car parks are located. The long distance interchange is solved very well. Both IC- and local trains stop in a stub station below the departure and arrival hall. A direct link by escalators and lifts is provided. Connections between modes are coordinated with the needs of the airport. Barrier free access is provided and usual services like gastronomy, bathrooms and shops are available on the airport floors.

**Intermodality**

Ground access of the airport is ensured by regular train services and easy road access. The airport even can be approached by bicycle (or by foot) due to its central position.

The airport is directly connected by rail to some main cities of Belgium (Brussels, Gent, Leuven, Liège, Mons). In the future (2012) also direct connections to Antwerp and Amsterdam will be offered by a tangential rail link between two main lines (Brussels-Antwerp and Brussels-Liège) passing under the airport. This subway will create the possibility of eventual operation by HST services at this station. The airport’s train station is located below the terminal (basement level-1). Up to 4 trains per hour connect the airport to Brussels North, Brussels Central and Brussels Midi stations. Moreover there are direct train services to the East, South and West of Belgium.

The bus station is located on level 0 – one floor down from the arrivals hall – and can be reached easily by using the escalators or elevators. Centrally located on the bus station there are three platforms. The bus company De Lijn operates express bus services to the railway stations Brussels North, NATO Headquarters and the Brussels underground station Roodebeek. Moreover, De Lijn also operates regional services e.g. to Mechelen, Leuven,
Vilvoorde, Merchtem, Jette, Brussels Expo, Haacht, Diegem, Roodebeek, Groenendaal and Kapelle-op-den-Bos. Buses operated by the MIVB/STIB run a direct service between the NATO Headquarters and the European institutions in Brussels. The frequency of these buses is tailored to the demand (peak and off-peak hours), generally 3 buses per hour. Every hour a direct coach service (Antwerp Express) departs from the airport to the city centre of Antwerp. This coach service is operated every day.

The airport can be reached easily by car. On Brussels ring-road Brussels Airport is signposted sufficiently and therefore easy to find. Brussels Airport currently provides a total capacity of 10 600 spaces within walking distance from the terminal building. The different car parks at Brussels Airport attend to all parking needs all the year round. The parking offer includes short-term parking, long-term parking and special parking services such as VIP parking or extra secured parking. For remote car parks free shuttle service is offered.

Most car parks on the departure and arrival levels provide dedicated parking spaces for the disabled. These spaces are located as close as possible to the car park exits. Free camera-monitored parking facilities for motorcycles are provided on coach park on level 0. With 3.40 euro/h, 20 euro/day parking at Brussels Airport is quite expensive.

Taxis with a taximeter are permanently available in front of the arrival hall. The fare from the airport to the city centre of Brussels is normally around 35 euro. Wheelchair users can order a special taxi which is adjusted to their needs.

Most hotels in the vicinity of the airport provide free shuttle buses. These buses pick up or drop off passengers on the coach park on level 0.

Cyclists can follow a fenced off cycling track (marked in red) from the roundabout in Zaventem to the coach park on level 0. Bicycles can be securely attached in camera-monitored parking racks.

From the roundabout in Zaventem pedestrians also can use the fenced off footpath (marked in red) to bus park on level 0. From the bus park direct access to the passenger terminal is provided.

Convenience for Passengers

On airport floors abundant service facilities are located. These are usual services like gastronomy, bathrooms and shops. Furthermore, a pharmacy is located in the public area of the passenger terminal opening every day, including weekends. Tickets, hotels and car rentals information can be obtained at the travel agency. For business travellers Brussels Airport offers several reception rooms for meetings, presentations and congresses. Mobile phones, fax, e-mail and internet services are offered, too. Very good services are provided for people with children. Baby-changing facilities are available in the terminal and for heating up baby food; assistance will be got in several of the airport restaurants.

Waiting rooms are integrated into the airport complex on ground floor. There is no room offered on station level (-2).

Porters are on hand at the airport for groups arriving and departing by coach. These porters give help with luggage. Individual travellers can also make use of this service. Passengers may ask therefore at the info desk located in the departures hall. For their own assistance,
Passengers can use the luggage trolleys which are available in big numbers on neuralgic places of the airport. Lockers are available in the public zone and in the transit-zone.

For impaired people special services like assistance dogs – guide dogs for the blind – are offered. Toilets are accessible for wheelchair users. The entrances to the terminal open automatically and are large enough for wheelchair users to get to the departure gates by themselves. The doors are marked with contrasting strips to make them more visible for the visually impaired. Elevators, ramps and escalators provide easy access to all levels. The spacious passenger elevators are suitable for wheelchairs. In the terminal, facilities for the disabled are clearly signposted and identified with the standard international symbol.

The airport is secured by common airport security services, though not that intensive on station level. Car parks are ideal action fields for potential thieves. The close cooperation between the car park manager and the Federal Police lead to a marked fall-off in the number of offences of this kind.

On and in the vicinity of the airport you will find a range of 17 hotels in various price classes.

**Information**

Real time information is provided by spoken messages and on destination screens. The screening is only in the airport but not in the rail station. The Brussels Airport information desk is situated in a central position in the departure hall. The staff here will answer any questions about the airport facilities or direct passengers to tour operators and airlines. Opening hours are from Monday through Sunday, from 6:00 a.m. to 9:00 p.m.

Via internet timetables, arrival times and departure times of flights and trains can be obtained.

**Outstanding best practice characteristics for long distance intermodality**

- Trains connect the airport with cities like Brussels, Leuven, Gent and Mons. In 2012 a new line will connect also Antwerp with the terminal
- The connections between different modes are coordinated
- Special services are offered for parents with children (baby changing room, facilities for heating bottles, assistance in restaurants)
- Special services can be used by handicapped persons. For example, visually impaired persons can order a guide dog to assist them

**Outstanding best practice for implementation**

- Passenger services and shops in airport building
- Using a fenced path the airport can be reached as well by bicycle and by foot
- Camera-monitored deposits boxes are available to store bicycles
Characteristics of weakness

- Today the railway station is a stub end, which makes it not optimally accessible by rail, particularly from the north and the south-east of the country. The only hub for HST in Brussels lies on the opposite side (station Brussels South) making long distance intermodality uncomfortable.
- Due to daily traffic jams on the ring motorway around Brussels, access to the airport by car has to count with structural delays.
- The cooperation contract between NMBS (rail) and the Airport administration stipulates that NMBS is not allowed to organise other commercial activities except train ticketing. This makes the rail level the most desolate place of the airport.
- Information about departure and arrival of the planes are screened only in the airport but not in the railway station.
- Parking spaces quite expensive.

Contact

Brussels Airport Company

Main Operator
BE 1930 Zaventem
Tel. +32 2 753 42 00
email: info@biac.be
web: www.brusselsairport.be
ANTWERP CENTRAL STATION
Koningin Astridplain 27
2018 Antwerpen
Belgium

Technical features
Available modes: International train, interurban train, urban train, urban bus, regional bus, tramway, subway, taxi, private car, bicycle, pedestrian
Location: Centre of Antwerp
Developed area: 48 800 m²
Passengers per year: 5.5 million long distance
Long-distance trains per year: 12 400
Regional trains per year: 75 000
Number of platforms: 14 (tracks)
Number of long-distance train operators: 3
Number of regional train operators: 1
Long-distance buses per year: 11 700
Regional buses per year: 460 000
Number of local public transport lines: 25
Number of parking spaces: 1 040
Number of direct road exits: 0

General Information
Antwerpen-Centraal (Antwerp Central Station) is the name of the main railway station in the Belgian city of Antwerp. The station is operated by the national railway company NMBS.

The original station building was constructed between 1895 and 1905 as a replacement for the original terminus of the Brussels-Mechelen-Antwerp Railway. The stone clad terminus buildings, with a vast dome above the waiting room hall were designed by Louis Delacenserie and the vast (185 metres long and 44 metres high) iron and glass train hall by Clement van Bogaert. The station is widely regarded as the finest example of railway architecture in Belgium. Since 1998 large-scale reconstruction work has been done to convert the station partly from a terminus to a through station. A new tunnel has been excavated between Berchem station in the south of the city, and Antwerp-Dam station in the north, passing under Central station with platforms on two underground levels. This allows high-speed trains to travel through Antwerp Central without the need to turn back.

The former situation with 10 cul-de-sac tracks has been replaced by 4 through-going tracks (2 platforms) on level -2, 4 cul-de-sac tracks (2 platforms) on level -1, and 6 cul-de-sac tracks (4 platforms) on level +1. The major elements of the construction project are completed. The first through trains ran on March 25th in 2007. Through high speed services
are anticipated to begin in December 2008.

The facelift of Antwerp Central Station (1997-2007) is both an investment in maintaining Railway heritage and an adaptation to its role of HST-station. It was simultaneously a main stimulating city planning measure to revitalise the station quarter. The position, originally (1836-1870) situated out of town, lies today in the real centre of the city, near to the diamonds quarter. The capacity has been lifted from 25,000 passengers per day to potentially 100,000. The station had ten stub end tracks. Due to tunnel construction it has now 14 tracks, four of them through going. Platforms are constructed on three levels (+1, -1 and -2). A fourth level (ground level) accommodates a shopping mall, booking and information offices and a large central plaza.

The station is managed by NMBS, the urban transport zones are under responsibility of De Lijn. There is a task force about intermodality on national level. All four Belgian PT-operators are involved (NMBS, MIVB, De Lijn, TEC). On that platform all problems about interconnections, planning and building programs are discussed. The station square is property of NMBS but its reconstruction took place in cooperation with De Lijn and the city council.

Structural Arrangement

The station consists of the original old building and the brand new part which was built underground. The station now has four levels. At level +1 (the current station) 6 terminating tracks are located. They are arranged as two groups of three and separated by a central opening allowing views of the lower levels. Level 0 houses ticketing facilities and commercial space. At level −1 (7 meters below road level) four terminating tracks, arranged in two pairs are situated. Level −2 (18 meters below road level) also has got four tracks. The two central tracks are leading to the rail tunnel under the city (used by high-speed trains and fast domestic InterCity services). The renewal sees in a few months also the opening of a second entrance on the south end of the platforms. This will reinforce considerably the influence zone on the back side of the track levee.

Intermodality

There is a direct connection under the station square to a car park (800 spaces) including a Kiss & Ride platform with max. 15min. waiting time and a bike shelter offering rent-a-bike and a bike workshop service.

The station is situated in the middle of the urban and regional tram and bus network. Taxis and buses to the south of the city have a stop next by the entry. The connections between most other lines are not excellent. Routes to both subway stations (“Diamant-Centraal Station” and “Astrid”) and to tram/bus stops are diverse and badly signalled, though there has been built a direct connection to the subway station “Diamant-Centraal Station”. There is no ticket integration between railway and city transport except for season cards (so called “combination cards”).
Conveniences for Passengers

The station offers many spaces and locations for a convenient stay. There are some restaurants, snack bars and cafes. In the middle of the open space below the track dome there is a police control centre observing via a camera network. On the ground floor there is a mall with a diversity of shops and coffee bars including a dozen of jewellery shops. A check-in office for flights on airports of Brussels and Schiphol are in project.

For luggage short time storage lockers are available.

To support impaired passengers the whole terminal is barrier free accessible. Also impaired accessible sanitary rooms are installed.

Information

Modern electronic displays that provide departure information and also occurring delays or platform changes are installed at several places at the station and in the platform halls. Audio information is complementary, though difficult to understand by echoing in the immense volumes of the building.
The split of the 14 train platforms over three levels could make it difficult to find out the structure of the station, nevertheless the mentioned open volumes give a clear insight in how it works.

Outstanding best practice characteristics for long distance Intermodality.

- The site of the central station in the real city centre is a bilateral strength making easy “last kilometre” relations
- Direct connection under the station square to 800 parking spaces and sheltered bike stands
- Bike workshop service and rent-a-bike is offered in the railway station

Outstanding best practice for implementation

- The result of transformations of the end station to a through station applying most actual comfort standards, with respect of the heritage
- A check-in office for flights on airports of Brussels and Schiphol are in project

Characteristics of weakness

- Apart from the Amsterdam-Antwerp-Brussels(IC)-Paris (Thalys) there are no international long distance relations. The rail connection with Germany (particularly with the northern half) is poor. Works have been started on a direct rail link with Brussels national airport in Zaventem (35 km). This will markedly ease the connection Antwerp-Airport reducing travelling time from 70 to 25 minutes in 2011. Currently the private car has a main market share on this connection
- Signalling for passengers is still not ideal, though is programmed for next year (after the opening of the second station entry on the south side)
- Connections with public transport modes are not optimal
- There exist no combined ticket for the railway and the local transport system

Contact

NMBS-holding  Patrimonium- district NO
Main operator
Kon. Astridplein 27
2018 Antwerpen
Responsible person: Toon Commerman
Email: toon.commerman@b-rail.be
LIEGE GUILLEMINNS

Technical features

Available modes: International train, interurban train, urban train, urban bus, taxi, private car
Location: 2.5 km from centre of Liège
Developed area: 50 000m²
Passengers per year: 6.1 million
Long-distance trains per year: 72 000
Regional trains per year: 40 000
Number of platforms: 5
Number of long-distance train operators: 4
Number of regional train operators: 1
Long-distance buses per year: N/A
Regional buses per year: N/A
Number of local public transport lines: 10
Number of parking spaces: 800
Number of direct road exits: 1 to motorway

General Information

Liège-Guillemins train station is the main station of the city of Liège, in eastern Belgium. It is one of the most important hubs in Belgium and is directly connected to the high-speed train network. In 1838, only three years after the first continental railway, a line was linking Brussels and Ans, in the northern suburbs of Liège. The first train station of Liège-Guillemins was inaugurated in May 1842, linking the valley to the upper Ans station. In 1843, the first international railway connection was launched, linking Liège to Aachen and Cologne. The station was modernized and improved in 1882 and again in 1905 for the World Fair in Liège. The actual station of Liège Guillemins was built in the 1958-1960’s. It is the main station of Liège though it is situated peripheral as the main line from Brussels to Cologne was built outside the city. As the station building of 1960 is getting too small, and got a worn look, a new station from the architect Santiago Calatrava is currently being built. The inauguration is planned for the end of 2008. It will have 9 tracks and 5 platforms (three of 450 m and two of 350 m length). All the tracks around the station have been modernized to allow high speed trains arrivals and departures. The new building is a very original landmark. Platforms are already in use, but most services are still active in a provisional version. The former station building has been demolished.
The new building provides a range of original spaces with the typical Calatrava look. An ambitious city renewal project has been foreseen between the Maas (river) and the railway site.

(URL: http://lgv2-2005-lg.site.voila.fr/lgv2/Liege/Liege/lieg0507.html
http://www.euro-liege-tgv.be/journal_liege_g_3.pdf)

**Structural Arrangement**

The new building has the form of a wide steel arch of ca. 600m length, and is built 500m east of the former station. The construction of a new station square is foreseen, in connection of a revalorisation of the whole neighbourhood of Guillemins.

**Intermodality**

In addition to the national traffic, Liège-Guillemins station welcomes Thalys and ICE trains, connecting Liège to Brussels, Paris, Aachen, Cologne and Frankfurt. Two new dedicated high-speed tracks HSL 2 (Brussels-Liège) and HSL 3 (Liège-German border) have been built and are already in use. There are also plans for Eurostar and ICE to link directly Liège to London. Liège Guillemins is also served by some intercity trains on the main Belgian East-West axis (Liège-Brussels-Ostend) and several local trains from the Ardennes valleys. Liège Guillemins is a station “on the line”. Those who want to be in the city centre have to change on a city bus for a distance of several kilometres, or on a train serving the city centre station Liège Palais, which is much smaller. Liège-Guillemins is also a transportation hub for TEC Bus: more than 1 620 buses carrying 15 000 people serve the old station everyday. Liège-Guillemins is one of the rare train stations in Europe directly connected to the highway network (E40-E25).

**Conveniences for Passengers**

In general nearly all modern passenger utilities are foreseen. As the final phase of the construction is still in progress (including the implementation of the definitive users accommodations), it is difficult to evaluate now.

**Information**

Modern electronic displays will be installed, informing about arrival and departure times as well as about delays or platform changes.

**Outstanding best practice characteristics for long distance intermodality**

- Outstanding architecture, making the station to a well known reference point as an example of implicit information. This is important as the hinterland of Liège, for a substantial part, is situated in the Netherlands (Maastricht) and Germany (Aachen)
• The new station is one of the rare main city stations with a direct connection to the motorway network

Outstanding best practice for implementation
• As the final phase of the construction is still in progress, (including the implementation of the definitive users accommodations) it is difficult to evaluate now
• The station can have an enormous positive influence on its urban surroundings
• The railway station is directly connected to the high-speed train network, connecting national but also major European Cities (Paris, Cologne, Frankfurt etc.)

Characteristics of weakness
• The station is peripherally situated towards the city centre (dist. ca. 2.5-3 km)

Contact
Operator: SNCB-NMBS
B-holding, - Patrimonium
Frankrijkstraat 85, B-1070 Brussel

Function of company Project client: TUC RAIL
Frankrijkstraat, 91
1070 Brussel
web: www.tucrail.com
BRUSSELS SOUTH
(West): Frankrijkstraat; 1070 Brussel
(East): Fosnylaan; 1060 Brussel
Belgium

Technical features
Available modes: International train, interurban train, urban train, urban bus, regional bus, tramway, subway, taxi, private car, bicycle, pedestrian
Location: 1.7 km south-west from the centre
Developed area: 20 ha
Passengers per year: ca. 10 million
Long-distance trains per year: 54 000 intl.
Regional trains per year: 350 000
Number of platforms: 24 tracks
Number of long-distance train operators: 5
Number of regional train operators: 1
Long-distance buses per year:
Regional buses per year: 16 500
Number of local public transport lines: 30
Number of parking spaces: 1 500
Number of direct road exits: 0

(Source: URL: http://nakamurakazuo.blog.so-net.ne.jp/, 06/2008)

General Information
Brussels South is the main hub of both the inland rail and the high speed network of Belgium. For that reason it has been modernized in the 1990’s, together with a redesign of the surroundings, which is still in process. There are daily more than a 1000 trains between Brussels-South and Brussels-North. Unfortunately, the station is not optimally situated towards major administrative hot spots of national and European level in the city. Moreover, it is situated on the opposite side of Brussels in relation to the Airport. For this reason long transfer times between transport modes can’t be avoided.

The original railway station, designed by architect Payen, opened in 1869. In 1949, it was pulled down and replaced by the present yellow building with the clock tower because of the North-South Junction project. In the 1990s, the Eurostar/Thalys terminal was added along the Rue de France/Frankrijkstraat. These high-speed trains connect Brussels to London, Paris, Cologne and Amsterdam.

The station is managed by NMBS (Belgium Rail Association), the urban transport zones are under the responsibility of MIVB (Public transport of Brussels). The regional bus station is organised by De Lijn (a company run by the Flemish government in Belgium to provide public transportation). There is a task force about intermodality on national level. All four Belgian PT-operators are involved (NMBS, MIVB, De Lijn, TEC). Thalys and Eurostar are
represented by NMBS. On this platform all problems about interconnections, planning and building programs are discussed.

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**Structural Arrangement**

The station’s terminal is of compact structure. To its south the railway tracks and platforms are situated. Below these tracks to the north-east of the terminal, the tramway station and the stop for urban buses are located. The regional bus station is about 300 m away, crossing a boulevard. For high-speed-trains (HST) like Thalys and Eurostar separate platforms are used. Close to these platforms the according waiting areas and security checks are situated. Except for Eurostar the access to all functions and connections is barrier free.

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**Intermodality**

The station is situated close to the centre of Brussels. Therefore ground accessibility is as good as the public transport of Brussels is. The station is served by the underground line 2, the tramway lines 4, 52, 55, 56, 81, 82, by urban buses run by MIVB, regional buses run by De Lijn and interurban buses run by TEC.

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Figure 5-23: Position plan of the stops of public transport modes at the Railway station Brussels
South

Due to the urban location the train station is also easily accessible for cyclists and pedestrians. For cyclists parking spaces are offered and can be used for free. In the near future the metro line 2, which is nearly a circle line, will be extended to the Weststation closing the circle. This will ameliorate considerably the accessibility of Brussels South, from the west and northwest of the city.

The tram station is situated below the railway tracks and therefore roofed and weather protected. At this place also the MIVB-buses have their connection point. The other bus lines stop right next to it but have no weather protected stations. Parking facilities are integrated into the stations building and are also available in the immediate vicinity of the station.

Conveniences for Passengers

The waiting areas are situated in a wide corridor below the tracks with direct access to the platforms. High-speed-train (HST) passengers have a separate waiting room in connection with the reserved HST platforms. The question of security plays an important role, as Brussels South is one of the most frequented stations of Belgium. It’s the starting point of Eurostar and contains also the biggest signalling command post of the NMBS network. There is a separate security check-in for Eurostar passengers, situated near the “long distance” platforms.

There is a mall in connection with the waiting area, which offers a variety of shops and restaurants. Sanitation and first aid facilities are available. Also a luggage locker and a left-luggage office are situated there.

Information

Timetables can be obtained via internet. At the station timetables can be seen on screens distributed to neuralgic points. The signs at the station are multilingual due to the importance of Brussels in terms of administration at national and European level.

Outstanding best practice characteristics for long distance intermodality

- Main Belgian hub for international trains: Thalys, TGV, Eurostar, and classical international trains, inland IC relations

Outstanding best practice for implementation

- Good parking and connection with all local public transport modes
- The train station is easy accessible for cyclists and pedestrians because it is located in a central position
Characteristics of weakness

- Not directly linked with EC-headquarters, and far from airport
- The access to the Eurostar is not barrier free

Contact

NMBS-SNCB
Main Operator
Frankrijkstraat 58
1050 Brussel
Responsible person:
web: www.nmbs.be
GARE DO ORIENTE
Av. D. João II, Lote 1.15.
1990 - 233 Lisbon
Portugal

Technical features
Available modes: International train, interurban train, urban train, interurban bus, urban bus, metro, taxi, private car and pedestrians
Location: Eastern area of Lisbon
Developed area: 162 600m² (construction area)
Passengers per year: approx. 55 million
Long-distance trains per year: N/A
Regional trains per year: N/A
Number of platforms: 4
Number of long-distance train operators: 1
Number of regional train operators: 1
Number of long-distance bus operators: 9
Long-distance buses per year: N/A
Regional buses per year: N/A
Number of local public transport lines: 13
(Metro:1; Bus:10; Urban train: 2)
Number of parking spaces: 2 000
Number of direct road exits: 4

General Information
The Oriente station - designed by the Spanish architect Santiago Calatrava - was commissioned by the city of Lisbon in 1993, after an invited competition. It was inaugurated in 1998 and its immediate goal was to serve the great number of visitors expected for the World Expo in 1998.

The management of the interchange terminal is accomplished by a company called GIL (Gare Intermodal de Lisboa). GIL is responsible for the management, coordination and cooperation of all terminal related concerns. The ownership is composed as follows: 51% Parque Expo SGPS, 33% Refer and 16% Metropolitano de Lisboa.

The responsible firm for the maintenance and management of the equipment and infrastructure is a company called Marma. This company coordinates several private firms that are responsible for areas such as cleanliness, security etc.
Structural Arrangement

The station encompasses a bus terminal, a train and a metro station and is divided into several levels. At the upper level the platforms for the national (and international) train network are situated. At the lower levels the underground is available. The bus terminal, the taxi stand and car rental companies are located at the street level, as well as the entrance of Vasco da Gama shopping centre.

All platforms of the train station are accessible through escalators or cylindrical lifts. These platforms serve eight lines of tracks. The platforms are roofed by a metal structure, which is 25 meters high. This construction consists of a series of slender pillars that split on the top and are connected with each other to create a continuous folding structure.

All levels can be reached barrier-free by lift.

The facilities of the terminal are arranged in the building as follows: The train station is located on level +1 (booking office) and level +2 (passenger platform). It has a length of 240 meters and a width of 80 meters. The bus terminal for interurban and urban departure and arrival is located on level 0 (street level) and occupies an area of 74.200m². Five platforms with a capacity to handle 40 buses simultaneously are provided. For the taxi service an exclusive platform is offered. The metro station is located on level -5 (technical platform), level -4 (passenger platform) and level -3 (booking office). It has a length of 145 meters and a width of 45 meters. Access is provided by stairs, escalator and lift.

Intermodality

The Oriente station is an intermodal terminal, the hub for the various networks of public transportation: Its facilities serve and interconnect several forms of transport. Passengers can change between metro, international trains, interurban and urban trains, interurban and urban buses as well as private car, taxi and bicycle. The terminal can also be accessed by foot.

There is also an airport link (by bus line 44), which takes seven minutes from the train station to the airport. Taxis are available for this connection, as well. This transfer takes about five minutes and costs between five and eight Euros.

Gare do Oriente also will be the high speed train stop in Lisbon in the future, so Oriente station will be served by both conventional and high speed trains.

The name of the station is "Oriente" and is the final destination of the red line of the metro of Lisbon. This line provides a connection from the city centre to the inter-modal interchange terminal with a length of 6 km and seven stations. Currently, there is no a connection to the airport, but it's foreseen to extend the line to the Airport of Lisbon. The Airport will be reached within 5 minutes from the station.

Every transport mode has an exclusive ticket, but there is also an intermodal contactless smartcard "Lisboa Viva" available, which combines trains, buses and subways. There is another rechargeable contactless smartcard called "7 Colinas" that allows the recharge with several tickets of the same mode. Combined tickets for train, car rent and parking space are
also offered. Furthermore elderly people and children are fared with special discounts.

SIIT is the Portuguese system of intermodal information of transports. The integrated information system about transports offers data about intermodal journeys and is available online and at real-time via www.transpor.pt. There is an information desk providing information according to SIIT situated inside the terminal building.

A single ticket (2007) valid for the metro network costs 0.75 euro. However, the best way to use the Metro is to purchase a Sete Colinas electronic ticket (akin to London's Oyster card) costing 0.50 euro (2007). This card can be charged up with monetary value using the machines at every station. Although the Metropolitano de Lisboa is separate from the Lisbon bus and tram operator Carris, the "Sete Colinas" card is usable on bus and tram services as well as for the Metro.

A single bus ticket valid for the network costs 1.30 euro (on board) and 0.75 euro at the "Sete Colinas" card.

The parking garage is located below the bus station. It provides space for 2 000 vehicles and is opened 24 hours a day. Prices vary from 0.40 euro per 15 minutes to maximum 8 euro a day depending on the kind of day. That means that prices are different on week days, weekends and holidays. Exclusive to train users with return tickets, combination tickets for "Alfa Pendular + Intercidades" + parking space are available.

**Convenience for Passengers**

A parcel delivery service, delivering the luggage from station to station, runs the bus operator Renex, Rodonorte/Santos Group. On level -2 of the train station automatic lockers can be found. They are accessible 24 hours a day and which are video surveyed.

The waiting areas of the metro, bus and train are all equipped with benches. On the first floor four waiting rooms are provided.

On level -2 a police station is located exclusively responsible for transport security. A private company called "Prestibel" is responsible for the security of the whole infrastructure. "Prestibel" operates 24 hours a day with video surveillance and eleven security guards.

The station is equipped with six shops on level -3, 24 shops and a left-luggage office on level -2, 17 shops and bathrooms on the street level and two shops, a bathroom, three information desks and waiting rooms on level +1. The shops fulfil the normal standard and good quality. Furthermore there is a connection (stairs/ escalator/ lift) to the shopping centre "Vasco da Gama", which has 164 shops of high standard (including 36 restaurants, 10 cinema screens, 1 health club and 1 indoor playground) distributed on 3 levels.

For impaired people the station provides barrier-free accessibility, ways without architectonics barriers and adapted WC.

A private company is responsible for the cleanliness of the station.
Information

SIIT is the Portuguese system of intermodal information of transports. The integrated information about transports is available online and at real-time (www.transpor.pt).

Information is also provided inside the terminal via information panels, information desks and electronic panels (real time). The content of the information panels is a floor plan, showing the location of the modes and facilities as well as the network design. Furthermore, one desk of the General Directorate of Land Transport (DGTT) is located at the station, providing integrated information about transports online and at real-time. Additionally, two desks of the Portuguese railway infrastructure (REFER) provide information about the trains on upper level.

The content of information of the electronic panels (real-time) is provided for metro and train concerns. It shows the information about the schedule, waiting times and destinations.

Outstanding best practice characteristics for long distance intermodality

- Convenient waiting conditions (e.g. waiting rooms with wireless in the train floor)
- Good fare integration (between train-rent-a-car; train-parking space, contactless smartcard for the last urban mile (e.g. metro, urban bus)
- Proximity (direct connection) to a high standard shopping centre (Vasco da Gama: www.centrovascodagama.pt)
- Using the local public transport to reach the railway station is quite economical (0.75 respectively 0.5 Euro)
- Train users with return tickets can use different combination tickets (e.g. concerning parking space)

Outstanding best practice for implementation

- The integration of the transport modes (train, metro, bus, taxi and private vehicle) by levels, in order to have short transfer times/distances
- Availability of good connections to the city centre

Characteristics of weakness

- Poor or inexistent information about further connections or adjustments of connections, poor information signalling in the station
- Lack of security
- Lack of stands and inexistent deposit boxes for bicycles
- Intermodal luggage handling is not possible
• There is no connection to the airport, but it is foreseen to extend the line to the Airport of Lisbon
• The underground and the bus/tram operator of Lisbon are separated. Although it is possible to use a special card which is valid for both

Contact
G.I.L – Gare Intermodal de Lisboa
Main Manager
Av. D. Joao II, Lote 1.15
1990-233 Lisbon
Responsible person
Tel. +351 21 891 82 22
email: gil@parquedasnacoes.pt
web:

CP - Comboios de Portugal
Railway operator
Largo da Estacao de Campolide, Ed. CP Lisboa
1070-116 Lisbon
Tel. +351 21 381 95 13
email: huprieto@cp.pt
MADRID AIRPORT
BARAJAS T4

Madrid Barajas T4
Calle Peonias, 2.
28042 Madrid
Spain

Technical features

Available modes: Aircraft, international train, interurban train, urban train, international bus, interurban bus, urban bus, underground, taxi, private car
Location: 12 km northeast of Madrid’s city centre
Developed area: 760 000 m² (T4: 470 000m² + T4S: 290 000m² + Parking: 309 000m² + roads: 64 000m²; total: 1100 000m²)
Passengers per year: 52 million (2007)
Take-offs and landings per year: 483 284 (2007)
Number of runways: 2 (During the construction of T4, 2 more runways will be constructed.)
Number of airlines: 30 (8 of oneworld alliance)
Long-distance trains per year: N/A
Regional Trains per year: N/A
Long-distance buses per year: N/A
Regional buses per year: N/A
Number of local public transport lines: 2
Number of parking spaces: 9 000
Number of direct road exits: 8

General Information

Madrid Barajas International Airport, located northeast of Madrid’s city centre, is the most important international and domestic gateway in Spain, the Iberian Peninsula and southern Europe. Opened in 1928, the airport has proved to be one of the most important aviation centres of Europe. The airport is operated by AENA (a company owned by the government which provides airport and air navigation services in Spain). Barajas is the primary hub and maintenance base for Iberia Airlines. Consequently, Iberia is responsible for more than 60% of Barajas’ traffic. The traffic of passenger in Barajas achieved 52 million in 2007. According to the Airports Council International, Madrid-Barajas was the world’s 10th busiest airport by passenger traffic (44 million passengers from January till October 2007). Further on, it was ranked as Europe’s 5th busiest airport by passenger traffic in 2006. Madrid Barajas International Airport is composed of four terminals, namely T1, T2, T3 (located in one complex) and T4 (5 minutes by bus from the complex).
Terminal 4, designed by Antonio Lamela and Richard Rogers (winner of the 2006 Stirling Prize) was inaugurated on February 5th in 2006. Terminal 4 is one of the world's largest terminals, with an area of 760,000 m². This terminal consists of a main building T4 (470,000 m²) and a satellite building (T4S: 290,000 m²). The distance between them is approximately 2.5 km. With the new addition, Barajas is designed to handle 70 million passengers annually.

During the construction of Terminal 4, two more runways of 3,500 meters were constructed. This allows simultaneous takeoffs and landings, 120 operations per hour are possible (one takeoff or landing every 30 seconds).

**Structural Arrangement**

The Terminal 4 consists of two buildings (T4 and T4S) and has got an outstanding arrangement of facilities.

The check-in procedure for the new Terminal 4 is processed at building T4. T4S only includes gates which can be reached from T4 by underground rail.

At the subbasement of T4 the underground rail is operating, linking the main building with the satellite building. One level higher, the metro station “Airport T4” of Line 8 is located. Passengers also find car rental services at this place. On the ground floor the arrival zone is situated with its 22 luggage reclaim conveyors. After leaving the passengers-only area, travellers get to the exit zone, where shops, restaurants, information desks, cash machines, money exchange desks and a lost-and-found desk are located. In front of the exit a taxi stand and a bus stop are located.

The first floor of T4 is the level leading to the gates. It is much wider than the other floors in order to provide space for docking the aircrafts on the outside. The level is equipped with gastronomy and shops, information desks and bathrooms.

On the second floor of T4 passengers find ticket counters, check-in desks and the security check. A unique feature is the separate link to the road network on this level. Passengers who want to leave the airport by plane may arrive by car on second level and enter the building at-grade. After check-in procedure passengers have to go down to level one, where the gates are.

Terminal T4S can be accessed by underground rail from Terminal T4 and is structured similarly to Terminal T4. On the ground, first and second floor gates for departing and arriving passengers are situated. The whole area is equipped with shops, gastronomy, bathrooms, information desks, automated teller machines and money exchanges.

Every single floor of the whole terminal building can be reached barrier-free. Therefore plenty of lifts and escalators were built.

The whole terminal building appears bright and convenient. This is managed through careful use of illumination, available by glass panes instead of walls and numerous domes in the roof, which allow natural light to pass through.
Intermodality

The Metro (Line 8) runs to Terminal 2 (from there passengers can walk to the Terminals 1 and 3) and to Terminal 4. The metro serves in intervals of three to five minutes and links the airport to the city of Madrid.

In October 2006 a bid was launched for the construction of a Cercanías link (commuter train) between Chamartín train station and Terminal 4. When finished in 2009, a single Cercanías Line will link Madrid Barajas Terminal 4 with Chamartín and Atocha AVE high-speed train station.

Long distance trains (AVE) and suburban trains are accessible by metro within a few minutes (RENFE - Red Nacional de los Ferrocarriles Españoles - does not serve the terminal).

Buses are operating from ground floor level of Terminal T4. Local bus services and intercity bus services may be used.

The major Spanish means of transport for interurban journeys are buses. The link to the Av. de America, central bus station of Madrid for urban and interurban bus connection is given directly by bus line 204. A separate bus line (200) links T1, T2 and T3 to Av. de America. Costs for the trip are as much as for the metro one euro.

If passengers access T4 by private vehicle or are going to be picked up, the driver has to leave the vehicle in the car park and, from there, walk to the arrival lobby (ground floor). The arrival lanes are for taxis and buses only. Brief stops are allowed in the departure lanes (second floor) to drop off passengers, visitors and luggage. There are seven car parks distributed around the whole airport. All of them are situated quite close to the terminals. Depending on which terminal to go, several exits from linking motorways are possible to use.

All interchange points, metro station, bus station and taxi rank are accessible barrier-free within short walking distances.

Convenience for Passengers

Following AENA’s policy of ensuring that adequate attention is given to accessibility, requirements and support for handicapped persons, Madrid-Barajas airport endeavours to assist all people with accessible facilities. Therefore, the designing of T4 has taken into account the contributions of the experts and institutions for the handicapped (members of the Spanish Committee of Representatives of Disabled People) in order to guarantee appropriate access to the facilities. In this spirit appropriate measurements like equipping lifts with Braille were undertaken.

Another specific action carried out at Madrid-Barajas airport has been a personalised support service for visually impaired passengers, which provides flight status information (when boarding starts, last call, changes or allocation of boarding gate, as appropriate) via mobile telephone messaging. The system works as follows:

Passengers must request the service, either before arrival at the airport or when they do the check-in for their flights. Airport staff will inform passengers of the various options provided by this service either by telephone or at the check-in desk. Passengers can choose between
receiving information on a mobile telephone (either their own or one specially provided by
the airport) or via personalised messages over the general PA system in the boarding area.
Safety is assured by security forces like national police, civil guard, municipal police and in
certain cases security guards.
For convenient luggage handling trolleys can be found and lockers are provided.

Information
The signage provided is very clear. Different colours for different areas make it easy to find
orientation inside the terminal building.

Outstanding best practice characteristics for long distance intermodality

- Signage-easy way finding (colour code)
- The metro connection city centre - airport has a high frequency, and the centre is
easily accessible with only one transfer (also very cheap). Also long distance trains
(AVE) and suburban trains are accessible by metro within a few minutes
- Check-in in advanced in the metro station Nuevos Ministerios
- Good support service for visually impaired passengers as well as for physically
handicapped persons
- The new Terminal 4 has a very high capacity (one take-off or landing every 30
seconds)

Outstanding best practice for implementation

- The train and metro stations are integrated in the airport, in order to have a short
transfer time
- The terminal building appears bright and convenient

Characteristics of weakness

- T4 is far away from the other terminals and requires an internal bus transfer or two
stops by metro
- Few transport connections to the rest of Spain (and no trains at all); it is necessary to
go to Madrid first, and then to the airport; some long-distance bus lines are offered
directly from T4 though. Even after completion of the Cercanías link, only local trains
to Madrid will be available
- Limited connections from Madrid to T4 by public transport, as all traffic is handled by
a single metro line and one bus line, with no reliable alternative in case of any
operational disturbances to the metro line. This problem will be solved once the
Cercanías link opens (expected in 2009)
• T4 handles check-in for both T4 and T4S. Getting to T4S requires a 2 km trip by underground people mover, adding considerably to the travel time within the terminal system
• Vast distances between check-in and departure gates
• No facilities (coffee shops, shops, etc) open before 5h30

Contact
AENA (Spanish Airport and Air Navigation Authority)
Main Operator
Calle Peonias,2.
28042 Madrid
Tel. 0034 902 404 704
e-mail: servicios-aeroportuarios@aena.es
web: www.aena.es
6 Prospective

All of the intermodal interchanges of the Catalogue of Best-Practice Implementation Examples will be analysed into more detail with the aim to identify the factors of successful development, implementation and operation of these services. Recommendations and guidelines will be derived that should reflect on how to design high quality standard intermodal interchanges on the basis of characteristics and criteria for seamless intermodal interchanges in Europe in view of

- technical
- organisational
- institutional and
- implementation related issues

for all relevant types of intermodal interchanges of interurban and long-distance travel including the last (urban) mile. Therefore an in-depth survey will be carried out with responsible persons for good practice services in the field that were identified within survey stage 1. Main goal of the survey is to collect information about the optimal and successful implementation process (dependent on the organisational, legal and institutional framework) and the optimal design of intermodal interchanges and optimal characteristics by a set of quantitative indicators.
7 References


8 Annex

- Questionnaire survey step 1
- Results of the assessment of the survey carried out with operators of stations, airports and ports: assessment of defined services at inter-modal interchanges according to their importance for seamless long distance travel from the passengers' point of view from 1 to 5 (1=most important, 5 = not important), whereby each rating had to be used 5 times at most (values rounded up). It should be noted that within one interview (station Berlin) these assessment modalities were not taken into account (ranks 1 till 5 should be used 5 times at most). (state 2008/03/31)
**Questionnaire survey step 1**

**Information for KITE – partners:**

The aim of the first stage of the survey is to evaluate good practice services from the operator's point of view and to find out who is responsible for successful development, implementation and operation of these services. Appropriate ‘key-persons’ for an in-depth interview in the second stage of the survey should be identified.

The interview should be conducted by telephone in combination with e-mail (detailed approach see “Survey guideline Part 1” Chapter 4.1).

*Fill in the green table in advance and delete this box before sending the questionnaire – it's only for your information.*

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<th>Good Practice Example</th>
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<td>Type of interchange point</td>
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<td>Mail</td>
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<td>Date of interview</td>
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</table>
Dear Sir or Madam,

Thank you very much for your willingness to participate in the survey of the European research project KITE. Your attendance and interest is of vital importance for the project output.

About the KITE project:
KITE is the acronym for “A Knowledge Base for Inter-modal Passenger Travel in Europe”, a project funded by the European Commission under the Sixth Framework programme. The main objective of the project is – as already covered in the title – the provision of a knowledge base in which all relevant information about inter-modality in long distance travel (including the “last mile”) will be collected and be easily accessible for passengers, transport providers, politicians, authorities and planners on an internet platform.

The KITE partnership joins experts of universities as well as private companies from Austria, Belgium, the Czech Republic, France, Germany, Portugal and Switzerland. The project runs for two years till December 2008.

Focus of the survey:
This interview is part of a two stage survey to evaluate Good Practice Examples for inter-modal interchange points in Europe concerning good practice services for passengers from the operators’ point of view. In this first screening phase general operators of various inter-modal interchanges (airports, stations, ports) in Europe are interviewed with the focus on

- identifying good practice services for passengers at the selected interchange terminals,
- identifying contact persons, responsible for the (successful) development, implementation and operation of these services.

If you are interested, we will be happy to send you the final report with the results of this survey at the end of the KITE project expected in December 2008.
### Services at inter-modal interchanges from the passenger's point of view

The following question wants to sensitise you to the **passenger's point of view** for different services at inter-modal interchanges for long distance travel including the “last urban mile” that means the local access to and egress from the terminal.

**A1**

Imagine you are a passenger at any inter-modal interchange terminal you know – it may be an airport, port or station.

In terms of seamless interchange and conveniences for your travel please **rate the services, features, facilities etc. listed below according to their importance for you from 1 to 5 (1=most important, 5 = not important).** Please rank all of the services but take into account to use each rating 5 times at most.

If you have any other ideas of important services, please add them in the vacant boxes below and rank them as well.

<table>
<thead>
<tr>
<th>Service</th>
<th>Rating</th>
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<tr>
<td>Integration into the superior road network (e.g. connection to a motorway)</td>
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<td>Sufficient information about arrival and departure times and further connections (integrating all modes)</td>
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<td>Short distances for transfer between long distance modes (between gates, platforms etc.)</td>
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<tr>
<td>Easy ticketing (ticket vending machines, integrated tickets, check-in etc.)</td>
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<tr>
<td>Good supply of shops and facilities for daily use and consumption</td>
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<tr>
<td>Convenient waiting conditions (e.g. enough seats)</td>
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<tr>
<td>Availability of information about destination (hotels, sights, events etc.)</td>
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<tr>
<td>Availability of long distance modes and high quality of connections</td>
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<tr>
<td>Existence of cycle lanes leading to/from or passing the interchange point</td>
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<tr>
<td>Short transfer times between long distance modes (coordination between transport operators, dynamic schedule synchronization etc.)</td>
<td></td>
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<tr>
<td>Intermodal luggage handling</td>
<td></td>
</tr>
<tr>
<td>Easy way finding (good and understandable signage)</td>
<td></td>
</tr>
<tr>
<td>Good availability of public transport for local access to and egress from the terminal (“last urban mile”)</td>
<td></td>
</tr>
<tr>
<td>Feature</td>
<td>Option 1</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Enough taxis in central position available</td>
<td></td>
</tr>
<tr>
<td>Availability of left-luggage offices and lockers</td>
<td></td>
</tr>
<tr>
<td>Good supply of car parks or parking garages</td>
<td></td>
</tr>
<tr>
<td>Barrier free accessibility and interchange for handicapped persons etc.</td>
<td></td>
</tr>
<tr>
<td>Deposit boxes and stands for bicycles</td>
<td></td>
</tr>
<tr>
<td>Good feeling of safety – security services and design of the terminal</td>
<td></td>
</tr>
<tr>
<td>Short waiting times at all capacity restraint points (check-in, ticket counter etc.)</td>
<td></td>
</tr>
<tr>
<td>Short distances between transport modes and service facilities within the terminal</td>
<td></td>
</tr>
</tbody>
</table>
A2  **Negative impressions of an interchange terminal**

What kind of **negative impressions** may any interchange terminal leave to you as a passenger? Please think of at least three and fill them in below ranked (the first is the most negative aspect).

<table>
<thead>
<tr>
<th>Negative Impressions</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B  **Services at inter-modal interchanges from the operator's point of view**

The following question wants you to **evaluate the inter-modal interchange terminal** you are responsible for from the **operator's point of view** on the basis of the services, features and characteristics listed below.

Please check the list and tick your rating (from very good to poor) for each aspect or service. If you have any other ideas, please add them in the vacant boxes and rate them as well.

<table>
<thead>
<tr>
<th>Service Description</th>
<th>very good</th>
<th>good</th>
<th>improve-able</th>
<th>poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermodal luggage handling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply of shops and facilities for daily use and consumption</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Short distances between transport modes and service facilities within the terminal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy ticketing (ticket vending machines, integrated tickets etc.)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Convenient waiting conditions (e.g. enough seats)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sufficient information about arrival and departure times and further connections</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature</td>
<td>Very Good</td>
<td>Good</td>
<td>Improvememt</td>
<td>Poor</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-----------</td>
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<td>---------------</td>
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</tr>
<tr>
<td>Availability of long distance modes and high quality of connections</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integration into the superior road network (e.g.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>connection to a motorway existing)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Feeling of safety – security services and design of the terminal</td>
<td></td>
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</tr>
<tr>
<td>Availability of taxis in central position</td>
<td></td>
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<tr>
<td>Barrier free accessibility and interchange for handicapped persons etc.</td>
<td></td>
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</tr>
<tr>
<td>Short waiting times at all capacity restraint points (check-in, ticket</td>
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<td></td>
<td></td>
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<tr>
<td>counter etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Availability of public transport for local access to and</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>egress from the terminal (“last urban mile”)</td>
<td></td>
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<tr>
<td>Supply of car parks or parking garages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of left-luggage offices and lockers</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Short transfer times between long distance modes</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(coordination between transport operators, dynamic schedule</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>synchronization etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of information about destination (hotels, sights, events</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short distances for transfer between long distance modes (between</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gates, platforms etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existence of cycle lanes leading to/from or passing the</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>interchange point</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposit boxes and stands for bicycles available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy way finding (good and understandable signage)</td>
<td></td>
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</tr>
</tbody>
</table>
C Identification of persons on the basis of their knowledge and responsibility at inter-modal interchanges

The following information is crucial for the further steps of the KITE-project.
We want to identify people who can give us information about the factors of success for good intermodal practice at your interchange terminal. Therefore we kindly ask for your assistance.

Please be so kind and name and give contact details (name, address, telephone number, e-mail) of:

1) representatives of your own company and

2) operators, companies or other persons (possibly three per topic)
who are involved in optimising the intermodal interchange point for seamless intermodal passengers travel according to the topics listed below. Please choose those you have rated “very good” or “good” in the previous question B.

We want to interview these people in a subsequent in-depth survey to gain knowledge about successful implementation of good practice services. For some topics you might be the qualified interview partner yourself.
<table>
<thead>
<tr>
<th>C1 Development, implementation and operation of intermodal integration of modes</th>
<th>1) Contact details of representatives of your own company (name, email, phone and short description of function)</th>
<th>2) Contact details of possibly three other operators, companies or persons (name, email, phone and short description of function)</th>
<th>Estimated total number of operators involved in this service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of long distance modes and high quality of connections</td>
<td>1)</td>
<td>2)</td>
<td>3)</td>
</tr>
<tr>
<td>Availability of public transport for access to and egress from the terminal (“last urban mile”)</td>
<td>1)</td>
<td>2)</td>
<td>3)</td>
</tr>
<tr>
<td>Integration into the superior road network (e.g. connection to a motorway existing)</td>
<td>1)</td>
<td>2)</td>
<td>3)</td>
</tr>
<tr>
<td>Supply of car parks or parking garages</td>
<td>1)</td>
<td>2)</td>
<td>3)</td>
</tr>
<tr>
<td>Availability of taxis in central position</td>
<td>1)</td>
<td>2)</td>
<td>3)</td>
</tr>
<tr>
<td>Requirement</td>
<td>1)</td>
<td>2)</td>
<td>3)</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Existence of cycle lanes leading to/from or passing the interchange point</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of deposit boxes and stands for bicycles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordination &amp; cooperation (between the various transport operators)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please fill in here)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C2 Development, implementation and operation of passenger services to support intermodality</strong></td>
<td>1) <strong>Contact details of representatives of your own company</strong> (name, email, phone and short description of function)</td>
<td>2) <strong>Contact details of possibly three other operators, companies or persons</strong> (name, email, phone and short description of function)</td>
<td>Estimated total number of operators involved in this service</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>Short transfer times between long distance modes</td>
<td>1) 2) 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sufficient information about arrival and departure times and about further connections (integrating all modes)</td>
<td>1) 2) 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short waiting times at all capacity restraint points (check-in, ticket counter etc.)</td>
<td>1) 2) 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy ticketing (ticket vending machines, integrated tickets etc.)</td>
<td>1) 2) 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermodal luggage handling</td>
<td>1) 2) 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please fill in here)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### C3 Development and implementation of design aspects of the intermodal interchange

<table>
<thead>
<tr>
<th></th>
<th>1) Contact details of representatives of your own company (name, email, phone and short description of function)</th>
<th>2) Contact details of possibly three other operators, companies or persons (name, email, phone and short description of function)</th>
<th>Estimated total number of operators involved in this service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short distances for transfer between long distance modes (between gates, platforms etc.)</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Short distances between transport modes and service facilities within the terminal</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Barrier free accessibility and interchange for handicapped persons etc.</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Easy way finding (good and understandable signage)</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Good feeling of safety – design of the terminal</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Other (please fill in here)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## C4 Implementation and operation of additional services for passengers’ conveniences

<table>
<thead>
<tr>
<th>Convenience Feature</th>
<th>1) Contact details of representatives of your own company (name, email, phone and short description of function)</th>
<th>2) Contact details of possibly three other operators, companies or persons (name, email, phone and short description of function)</th>
<th>Estimated total number of operators involved in this service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenient waiting conditions (e.g. enough seats)</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Good feeling of safety – security services</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Availability of left-luggage office and lockers</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Good supply of shops and facilities for daily use and consumption</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Availability of information about destination (hotels, sights, events etc.)</td>
<td></td>
<td>1) 2) 3)</td>
<td></td>
</tr>
<tr>
<td>Other (please fill in here)</td>
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<td></td>
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</tbody>
</table>
C5 Legal & regulatory framework at intermodal interchange

“Are there any legal requirements or laws which promote or constrain the high quality of intermodality? Who has knowledge about those issues at law?”

<table>
<thead>
<tr>
<th>Legal &amp; regulatory frame</th>
<th>1) Contact details of representatives of your own company (name, email, phone and short description of function)</th>
<th>2) Contact details of third persons (name, email, phone and short description of function)</th>
<th>Estimated total number of operators involved in this service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other (please fill in here)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Information for KITE - Partner

The assembly of the following question D is depending on the type of the interchange terminal. Whether the survey is held on an airport, train station or port only the related module has to be used. Please delete the remaining boxes related to the other two modes as well as this box.

### D Transport related Data

In this closing section we would like to collect some data describing your intermodal interchange terminal. In this context we would like to define three types of transport modes for your better understanding.

- **long-distance transport mode**: transport modes covering distances of more than 100 km;
- **regional transport mode**: transport modes covering distances less than 100 km but crossing city boundaries;
- **urban transport mode**: transport modes within the area of a city.

#### AIRPORT (please delete this box)

<p>| Developed area in m² (intermodal passenger transport related built surface area in m²; comprises runways, terminals, platforms, gates, car parks, etc.) |
| Passengers per year (number of passengers arriving and departing by aircraft being on a long-distance trip) |
| Take-offs and landings per year (departures and arrivals per year) |
| Number of runways (number of runways situated on the airport area) |
| Number of airlines (airlines operating on this airport for passenger transport) |
| Long-distance trains per year (number of departures and arrivals of long-distance trains serving the airport per year) |
| Regional trains per year (number of departures and arrivals of regional trains serving the airport per year) |</p>
<table>
<thead>
<tr>
<th><strong>Long-distance buses per year</strong> (number of departures and arrivals of long-distance buses serving the airport per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional buses per year</strong> (number of departures and arrivals of regional buses serving the airport per year)</td>
</tr>
<tr>
<td><strong>Number of local public transport lines</strong> (public transport lines for the last urban mile operating at the terminal, e.g. tramways, subways and urban buses)</td>
</tr>
<tr>
<td><strong>Number of parking spaces</strong> (number of parking spaces situated on the airport area including short- and long-time parking spaces as well as outdoor and indoor parking spaces)</td>
</tr>
<tr>
<td><strong>Number of direct road exits</strong> (exits from high-grade road network (motorway or expressway))</td>
</tr>
</tbody>
</table>

Thank you very much for your cooperation!
<table>
<thead>
<tr>
<th>STATION (please delete this box)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed area in m² (intermodal passenger transport related built surface area in m²; comprises terminals, platforms, car parks, etc.)</td>
</tr>
<tr>
<td>Passengers per year (number of arriving and departing passengers respectively being on a long-distance trip)</td>
</tr>
<tr>
<td>Long-distance trains per year (number of departures and arrivals of long-distance trains per year)</td>
</tr>
<tr>
<td>Regional trains per year (number of departures and arrivals of regional trains per year)</td>
</tr>
<tr>
<td>Number of platforms (number of train platforms for regional and long-distance passenger transport situated on the terminal area)</td>
</tr>
<tr>
<td>Number of long-distance train operators (number of train operators offering long-distance modes)</td>
</tr>
<tr>
<td>Number of regional train operators (number of train operators offering regional modes)</td>
</tr>
<tr>
<td>Long-distance buses per year (number of departures and arrivals of long-distance buses per year)</td>
</tr>
<tr>
<td>Regional buses per year (number of departures and arrivals of regional buses per year)</td>
</tr>
<tr>
<td>Number of local public transport lines (public transport lines for the last urban mile operating at the terminal, e.g. tramways, subways and urban buses)</td>
</tr>
<tr>
<td>Number of parking spaces (number of parking spaces situated on the station area including short- and long-time parking spaces as well as outdoor and indoor parking spaces)</td>
</tr>
<tr>
<td>Number of direct road exits (exits from high-grade road network (motorway or expressway))</td>
</tr>
</tbody>
</table>

Thank you very much for your cooperation!
<table>
<thead>
<tr>
<th>PORT (please delete this box)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developed area in m²</strong> (intermodal passenger transport related built surface area in m²; comprises terminals, platforms, gates, car parks, etc.)</td>
<td></td>
</tr>
<tr>
<td><strong>Passengers per year</strong> (number of arriving and departing passengers respectively being on a long-distance travel)</td>
<td></td>
</tr>
<tr>
<td><strong>Passenger ships per year</strong> (number of arriving and departing vessels per year)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of piers for passenger transport</strong> (number of piers on the area of the port)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of passenger shipping companies</strong> (number of operators serving this port on long-distance trips for passenger transport)</td>
<td></td>
</tr>
<tr>
<td><strong>Long-distance passenger trains per year</strong> (number of departures and arrivals of long-distance trains serving the port per year)</td>
<td></td>
</tr>
<tr>
<td><strong>Regional passenger trains per year</strong> (number of departures and arrivals of regional trains serving the port per year)</td>
<td></td>
</tr>
<tr>
<td><strong>Long-distance buses per year</strong> (number of departures and arrivals of long-distance buses serving the port per year)</td>
<td></td>
</tr>
<tr>
<td><strong>Regional buses per year</strong> (number of departures and arrivals of regional buses serving the port per year)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of local public transport lines</strong> (public transport lines for the last urban mile operating at the terminal, e.g. tramways, subways and urban buses)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of parking spaces</strong> (number of parking spaces situated on the terminal area including short- and long-time parking spaces as well as outdoor and indoor parking spaces)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of direct road exits</strong> (exits from high-grade road network (motorway or expressway)</td>
<td></td>
</tr>
</tbody>
</table>

Thank you very much for your cooperation!
## Intermodal Integration of Modes (Development, Implementation, Operation)

<table>
<thead>
<tr>
<th>Delivery (Development, implementation, operation)</th>
<th>Frankfurt Airport</th>
<th>Port Kiel</th>
<th>Karlsruhe Central Station</th>
<th>Port de Calais</th>
<th>Zurich Central</th>
<th>Zurich Airport</th>
<th>Lyon Central Station</th>
<th>Airport Copenhagen</th>
<th>Port of Tallinn</th>
<th>Stansted Airport</th>
<th>Prague Airport</th>
<th>Antwerp Central</th>
<th>Liege Guillemines</th>
<th>Brussels Zuid</th>
<th>Brussels-Oostende Station</th>
<th>Madrid Barajas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of long distance modes and high quality of connections</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Availability of pt for access to and egress from the terminal (&quot;first/last urban mile&quot;)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Integration into the superior road network (e.g. connection to an existing motorway)</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Supply of car parks or parking garages</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Availability of taxis in central position</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Existence of cycle lanes leading to/from or passing the interchange point</td>
<td>4</td>
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<tr>
<td>Availability of deposit boxes and stands for bicycles</td>
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## Passenger Services to Support Intermodality (Development, Implementation, Operation)

<table>
<thead>
<tr>
<th>Service (Development, implementation, operation)</th>
<th>Frankfurt Airport</th>
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<th>Madrid Barajas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short transfer times between long distance modes (coordination between transport operators, dynamic schedule synchronization etc.)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
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<td>1</td>
<td>3</td>
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<td>2</td>
<td>4</td>
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<tr>
<td>Sufficient information about arrival and departure times and about further connections (integrating all modes)</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
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<td>1</td>
<td>3</td>
<td>2</td>
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</tr>
<tr>
<td>Short waiting times at all capacity restraint points (check-in, ticket counter etc.)</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>2</td>
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<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
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</tr>
<tr>
<td>Easy ticketing (ticket vending machines, integrated tickets etc.)</td>
<td>3</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Intermodal luggage handling</td>
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</table>

## Design Aspects of the Intermodal Interchange (Development, Implementation)

<table>
<thead>
<tr>
<th>Design (Development, implementation)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Short distances for transfer between long distance modes (between gates, platforms etc.)</td>
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<tr>
<td>Short distances between transport modes and service facilities within the terminal</td>
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<tr>
<td>Barrier free accessibility and interchange for handicapped persons etc.</td>
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<td>3</td>
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<tr>
<td>Easy way finding (good and understandable signage)</td>
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<tr>
<td>Good feeling of safety – design of the terminal and security services</td>
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<td>4</td>
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## Additional Services for Passengers' Conveniences (Implementation, Operation)

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<tr>
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</thead>
<tbody>
<tr>
<td>Convenient waiting conditions (e.g. enough seats)</td>
<td>4</td>
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<tr>
<td>Availability of left-luggage offices and lockers</td>
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<tr>
<td>Good supply of shops and facilities for daily use and consumption</td>
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</tr>
<tr>
<td>Availability of information about destination (hotels, sights, events etc.)</td>
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